Help Industry Back to a Profit

WHILE the demand for paper and paper products is in much the same dull state as the demand for other commodities in the general line of business, we understand that some of the divisions of the paper industry have stabilized their prices and ceased the aggressive internicene competition for volume in view of the general stagnant demand for products.

We understand that the kraft paper division has worked out a curtailment plan which has been in operation since the middle of January, and this, from all reports that we can gather, has had the effect of stopping the ruinous bankrupting competition that prevailed before the first of the year, and has led to salutary stabilization of prices during this reconstruction period.

One item of news which has come to us in the past week seems immensely constructive, and if reliance can be placed on the reports which have eminated from Washington and the East to the effect that the Attorney General of the United States is about to recommend to Congress the suspension of the workings of the Sherman-Clayton Acts permitting the producing units in such overproducing industries as oil, copper, paper, etc., to get together and curtail their productions in order to prevent bankruptcy overtaking the industry, such suspension would prove most beneficial.

That the Government must act in the lifting of the prohibitive bans of the Sherman Act, is not open for argument, for the records of the industrial operations of such overproducing industries during the past year spell but one ultimate result—the wholesale bankrupting of industry and the consequent throwing of multitudes of men out of employment and the total loss of all taxes and revenue to the Government, states and municipalities.

It is idle to debate the question as to whether overproduction or underconsumption is the cause of our profitless industrial dilemma. The fact remains that the production capacity in various essential and standard industries is way beyond the capacity to consume, and unless the various producing units of such industries are allowed by law to adjust their production operations to consumption, and hold them there, there can be no such thing as bringing profit back into industry.

Industry must become profitable in order to bring back prosperity to the country.

Industry must be profitable in order to keep men employed.

Industry must be profitable in order to pay its taxes.

And industry cannot be profitable unless it be permitted to erect an economic barrier against the avalanche of overproduction capacity which threatens it with extinction.

We believe the time has come when every manufacturer in the paper business should get in touch with his Senator and Representative at Washington and urge them to get whole heartedly behind the plan to ameliorate the operating conditions in industry by the suggested suspension of the prohibitive features of the Sherman Act.

We submit that in demanding the right of the different producing units in an overproducing industry to get together and perfect a working schedule of operations based upon an adjustment of demand to supply is not only good sense, but basic economics, and the only existent solution to the problem of bringing profit back to papermaking in particular and industry in general.

High Lights of the Meeting

THIS year's meeting of the American Paper and Pulp Association, the fifty-fifth annual gathering since the organization of the association, was remarkable for several things. Assembling at a time that marked perhaps the lowest point of the depression in business, with both production and consumption curtailed far beyond previous records if normal expansion of population is considered, measures for the revival of activity pressed for attention.

This was most apparent in the deliberations of producers and consumers of wood pulp who are affected by currency fluctuations in countries overseas that have an outlet for pulp and paper products in the United States, and who now find it profitable on account of our maintenance of the gold standard and the absence of tariff bars to dispose of their goods in this country at prices which are in most instances below the cost of production here.

As noted editorially in our February issue, there is, where the advisability of restricting importations of foreign pulps is concerned, a conflict of interests between pulp producers and pulp consumers. This division of opinion found expression at different times and in various ways during the annual convention, being accentuated particularly at the general meeting of the association when definite action was advocated unavailingly by a respected former president, who happens to be both a producer and a consumer of pulps, chiefly of domestic origin.

The feeling was entertained quite generally that something ought to be done by our Government to equalize commodity values that are now affected by the flooding of this market with wood pulp products from countries of depreciated currency, but beyond efforts to bring conflicting interests into harmonious agreement about possible future action to be taken, nothing of a definite character was actually accomplished.

By the terms of a resolution adopted at the closing session, the officers of the American Paper and Pulp Association are to use their best efforts from now on to compose existing differences between the various groups of the paper industry affected by foreign competition. One of the developments of the annual meeting that attracted attention was the formation of a new association of sulphite pulp manufacturers who have organized themselves as a Sulphite Institute for the protection of their interests.

At meetings of the foresters, engineers and chemists of mills in membership there was not so much talk of economic matters as of kinds and qualities of raw materials; the changes that have been effected in wood uses, methods of pulping and in the standardization of products, during a comparatively recent period.

Apart from discussions of refinements in engineering and chemical procedure, the greatest amount of interest was taken in a largely attended joint meeting of the Pulpwood Department of the parent association with the Technical Association of the Pulp and Paper Industry. This began the series of meetings on Monday, February 15, and if it accomplished nothing else, it afforded an excellent demonstration of the value to the industry of scientific research, especially as conducted at the United States Forest Products Laboratory, Madison, Wis. It bore testimony also to the value of the statistical service rendered by the Pulpwood Department of the association, through an admirable review of shifting tendencies in pulpwood uses at different producing points in the southern states, as well as in the midwest, northwest and Pacific Coast regions.

This meeting, which added so much to our knowledge of the kinds and qualities of raw materials used or capable of being used in paper manufacture, was the result of planning by Secretary Charles W. Boyce of the American Paper and Pulp Association, who drew on his great experience as a forester in the United States Forest Service to marshal facts and figures relating to pulpwood sources and supply in such a way as to stamp him a master of the subject. It was quite fitting therefore that at the close of the joint meeting, Dr. John L. Parsons, as chairman of the Raw Materials Division of the Technical Association, should acknowledge the indebtedness of the members to Secretary Boyce for its success and assure him of the hearty co-operation of T. A. P. P. I. in the work of the Pulpwood Department.

The Institute of Paper Chemistry, recently founded at Lawrence College, Appleton, Wis., was at this initial meeting represented by Dr. Otto Kress, its technical director, who made a most informing and useful contribution, with a tabulation of figures showing the recent tremendous substitution of new woods for older species, a substitution that had come into existence during the past decade or two, and which still continues.

FIFTY . . .

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. ONE hundred and eighty-seven of our bleaching units, included in their equipment, are arranged for several different operating methods. Their output includes wood pulp produced by every known method, and many unusual types of fibre.

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+ EDITORIAL +

Some Results of Research

HISTORY is about to record the passing of the greatest menace the pulp and paper industry has ever known. For years past, overproduction has stalked the land, taking its toll. It has forced many mills to operate without a profit or to cease production; it has thrown thousands of men out of work.

For years past THE PAPER INDUSTRY has warned its readers of this evil. It has fearlessly given editorial expression against overexpansion; it has visioned for the industry diversification and stabilization as remedies for its woeful condition, and labored hopefully for the time when right activity would restore the pulp and paper industry to a normal and profitable basis.

It is gratifying, then, that the signs of the times prove these forecasts, recommendations and hopes have not been in vain, and with the upturn comes a feeling of deep satisfaction and accomplishment.

One of the latest and most interesting demonstrations of what is being done to develop new uses for paper and create new paper products, was staged at the exhibition of packaging, packing and shipping, sponsored by the American Management Association, at the Palmer House, Chicago, during the week beginning March 7.

Selling the package is a silent though vital element of modern salesmanship. Color and artistic design in packaging are dramatizing the sale of almost every type of merchandise and food products, and it has already become apparent that the importance of packaging has opened an unlimited field for the pulp and paper manufacturer.

The exhibits displayed a bewildering array of boxes, containers, bags and fancy wrapping materials. Wood, glass and metal containers were overshadowed by the variety and allure of dainty paper packages in delicate shades, embellished with gold and silver, foils and cellophane.

The exhibit of the Hinde and Dauch Paper Company, Sandusky, Ohio, indicated a solution of the packing problem for merchants. Dolls, toys, fine glassware, clocks and kitchen utensils now come to the merchant from the factory, each in its individual carton with unit packing. This insures the safe delivery of articles from the manufacturer to the consumer without repacking. The merchant is saved breakage and labor, the paper mill has an increasing market for cardboard and paper.

The International Paper Company, Southern Kraft Corporation and Union Bag Corporation displayed a most practical and unique package for vegetables. Paperboard boxes of different sizes held 2 to 10 pounds of potatoes and apples, also cranberries and other vegetables. The contents, weight and dealer's name were attractively printed on the cover. Here were also kraft specialties, various kinds of bags, and paper bags with cellophane windows.

Many types of corrugated and fibre shipping cases, folding cartons, paper boxes and set-up boxes were shown by the Container Corporation of America, Chicago.

The Du Pont Cellophane Company displayed a wide variety of cellophane-wrapped packages. Many of the exhibitors gave new ideas for the use of cellophane in making up novelties.

All of the company's extensive line of protective papers were exhibited at the booth of the Kalamazoo Vegetable Parchment Company, Kalamazoo, Mich. Here were also to be found paper dishcloths, paper dustcloths, which polish while you dust, and a new loose-leaf student's notebook with imitation leather cover, all made in the KVP plant.

Kimpak crepe wadding, a new product with Kimberly-Clark Corporation, Neenah, Wis., is used as a protective wrap or padding for all products of fragile construction. This company's booth was most attractive, being decorated with a new product called Billowrap. This is a corrugated material which is soft enough that the ends may be folded. It comes in all colors and makes a modern and attractive wrapper where protection is required.

Clay-coated folding boxboard and folding boxes were attractively shown by the Lowe Paper Co., Ridgefield, New Jersey.

A new sheet of glassine, called Riegelite, was shown by the Riegel Paper Company. This is a very transparent glassine sheet and is being widely used by bakers. Another attractive glassine product, Crystallon, is coated with a special process so applied that it gives it a beautiful surface resembling mother of pearl. It comes in all colors.

An interesting new product called Sylphrap is being introduced by the Sylvania Industrial Corporation, New York City. This is a cellulose wrapper paper, as transparent as cellophane. It is greaseproof and moisture-proof, and comes in sheets and rolls, white and all colors.

Among the exhibits of converters was a jiffy insulating bag which keeps a container of ice cream from melting for three hours in a moderate temperature. It is an ordinary paper bag insulated with paper-pulp. The Interstate Folding Box Company of Middletown, Ohio, displayed Foldomatic two-piece boxes which come packed flat, an egg carton with a special filler to prevent breakage, and various other types of collapsible boxes, trays, etc. The Sealright Company, Fulton, New York, showed a line of paper cans and food cups, in addition to its well-known milk bottle caps.

The Minnesota Mining Company, St. Paul, has a new process for making adhesive cellophane tape.

Paper mill research workers are on the job, and there is a deep significance in every new product created by them. Vision, confidence and perseverance along the lines of right endeavor will bring results.

ADVERTISING PAGES REMOVED

THE PAPER INDUSTRY
A MONTHLY EDUCATIONAL JOURNAL

Has Your Target a Bulls-Eye?

Lack of a definite beacon on which to steer is a source of difficulty of many companies

By JOHN F. SHERMAN
Chairman of the Board, The Sherman Corporation
New York, Chicago and Toronto

IT WOULD be difficult to name any premeditated action we take that is minus an objective—a target without a bulls-eye.

We would not think of wasting time fishing in a polluted stream. Neither would we plan to hold the Silver Skates meet in Florida. Is it not surprising then that we find so many business enterprises trying to score a bulls-eye when they don't even have a bulls-eye at which to shoot? And what is more, their target is only a vague conception. They are like the inebriated gentleman who was found trying to climb the lamp post. A passer-by observing his unhappy plight, asked what he was trying to do. "I am trying to get upstairs to bed," came the response. "I know I am on the right track because my wife has left the light burning on the landing, as she usually does."

What Is the Sales Bulls-Eye?

First of all it is conceded that we are living in a sales-marketing-distribution conscious era. Production, important and necessary as it is, is like the oxtail before it goes into the soup—away back.

With an output capacity capable of producing, so it is variously estimated, fifty per cent more goods than can be consumed, it is high time an awakening occurred. To meet the condition, a choice of two courses is open: (1) To balance production to consumption, or (2) To stimulate consumption to a satisfactory, normal, production pitch.

Course one is tantamount to an open acknowledgment of the failure of individual enterprise. It is to take the line of least resistance. In the majority of the instances it amounts to slow, but deadly, extinction. Course two is the American way: To build sales to production—go to work instead of waiting for the clouds to roll back—strip for action—roll up sleeves—don the thinking cap—resolve to submerge the thought that production must be allowed to lag so that it may meet the stagnant level of consumption. This creates a new outlook. The mountains will be mole hills, instead of the reverse as previously. A true bulls-eye will have been established in the absolute center of the target—stimulation of consumption through creative and aggressive action.

Spencer Gave the Formula

With the decision to buck the tide, the drafting of a plan of attack will ensue, along the following outline:

The Bulls-Eye—Stimulation of consumption through creative action.

The Archer — Management — direction and control.

The Bow—Production of saleable products at profitable sales prices.

The Arrow—Sales policies and methods.

It is to be noticed that the above procedure starts from the consumer, the bulls-eye, then branches out therefrom to envelop all the elements that comprise the business compound. This is only reasonable. It is a practical point to begin. As the illustrious Herbert Spencer has said: "Life is the adjusting of the internal relations with the external relations." Know, find out, all there is about external conditions and then fit the internal activities and methods thereto. The dogma holds good for the inanimate body as it does for the animate.

Locate the Bulls-Eye

Markets are actual, definite, tangible things. Subject to certain impulses and economic laws, usually dwarfed by undeveloped sales sense. The question is often asked: How can markets be measured with reasonable accuracy? The answer is, that it is only possible to gauge market potentialities by the setting up of a

sound research system to furnish the facts on the markets and the elements that impel, or retard, the profitable development thereof. These facts to concern:

1. Consumer reaction to product. Determine if—We are giving the consumer what he wants. Has he any reason to prefer competitive products to ours? Can the package appeal be intensified?

2. Location of markets. Find out where the areas of greatest buying concentration are. What can we do to get closer to these markets to better serve them?

3. Advantages that we enjoy in the various market areas, contrasted with the handicaps. To determine if we can capitalize on the advantages more than we are doing. Is there any way we can negative the disadvantages, that we are not using?

4. Our position in the market. Are we missing any opportunities? What is the status of our prestige? What can be done to promote our standing?

In other words, locate the bulls-eye. The moral effect alone of a definite, recognized objective, will more than justify itself in results. When Secretary of Commerce Lamont said, "A man's judgment is no better than his facts," he placed the difficulties of management in the bewhiskered "nutshell."

Policies and Facts

Our next step is keying the sales organization to the facts developed by market-consumer research. There are no set standards of policies applicable to all types of businesses. Each company has to operate on policies best suited to its individual needs, influenced by its position, its product, resources and the aspirations of the executive heads. However, it is clear to understand that a business without policies, standards against which to conduct the business, is an amorphous body. It is as uncontrollable as is free gas.

Methods, by and large, are controlled by markets, and by the habits, desires, eccentricities, living conditions and modern tempo of the consumers who comprise the markets. For instance: Does the product lend itself to combination selling? What is the best distribution procedure—direct to consumer; exclusive to wholesaler; exclusive to retailer; or a simultaneous attack on all these channels? What form should the concern's sales promotional activities and (or) media assume? From what type of representative can the best sales results be obtained? What basis of salesmen remuneration will imbue the greatest incentive to make sales? These are a few of the problems in marketing and sales methods on which we must look to the ever-changing market for the "kindly light."

Weave Production Into The Market Cloth

How often has this piece of advice been spoken and written? It will be reiterated as often in the future, but the seeds in most instances will continue to fall in stony places, as they have done.

The logic of supporting the sales offensive with an economic, soundly-predicated production procedure is to many, far too many concerns—too apparent to be properly heeded. On careful thought, nevertheless, the common sense of the dictum cannot be doubted.

Here is a striking illustration. A salesman to do justice to his job must first be sold, himself, to the product he is selling. If he isn't he surely will lack the "punch," the tenacity, so vitally necessary in the successful salesman. These qualities can only be instilled in the salesman by convincing him beyond doubt that the product he is selling is, in its class, A-1 quality, rightly priced, patterned and styled to meet the requirements of (1) what the wholesaler and retailer knows can be sold, and (2) what the consumer is known to want. It is manufacturing industry's job then, to kindle in the salesman the spirit to sell more goods.

Forging Ahead

With the goal set, sales and production co-ordinated for the offensive, the business is primed to forge ahead. At this point, it is appropriate to inject some of the high spots developed by the recent Department of Commerce report, entitled, "Forging Ahead During Depression." The report reviews the record of 358 companies who have successfully ridden the troublous waves of the last two years.

Of the 416 reasons to which these companies attribute their success, 254 check in favor of increased sales effort and greater pulling power of advertising; 91 in favor of improvement or restyling of products, and more efficient production methods netted 59 endorsements.

It is, of course, taken for granted that the "increased sales effort" factor proved successful because it was properly directed and controlled, and that the benefits derived from "improvement or restyling of products" were the result of creative research. Throw in with these the boosters for "more efficient production methods," and attention will be sharply attracted to the benefits engendered by the mere fixation of a definite and common goal, with the resulting co-ordination of efforts and ideas which it corrals.

'Tisn't Depression—It's Obsession

If it were not so simple, the cost so infinitesmal, and the possibilities so great, the chances are that the practice of setting an economically sound "bulls-eye" on which to focus the methods and activities of a business would be in more general use.

Yet, from the melee of alibis being given for poor earnings showings, the depression bugaboo continues to hold a conspicuous "corner." This, after more than two years' continuous hammering. We are tempted to inquire: Are these managements in a fashion parade? Are they unconsciously admitting incompetence? Or are they indulging in a little profound punning? Whatever it may be, there is evidence galore that the alibis in the main are instigated by "obsession," and not "depression," as we would be led to believe. Before leaving this paragraph, I must admit that 1932 has started with gratifying evidences of an awakening. The attitude of many managements to avail themselves of outside engineering help as shown by the records of our company, augurs well for the near future revival of business.

When profits fail to cover a fair return on invested capital, there is cause for concern. The business has gotten unbalanced. It has failed to adjust. It is floundering.

Whether revival is effected by a general house cleaning, or by the more drastic means of reorganization, the method employed will be the same, namely, the business will be given a definite, visible *Bulls-Eye* in its target.

CURRENT THOUGHT

BY WILLIAM SIBLEY

Make the Depression Pay a Profit

THE 1930-32 depression can be made to pay American Business a profit. A dollars and cents profit, equal to if not in excess of any monetary loss it has suffered due to decreased demand or restricted production. That is a big statement—and doubtless one that will be questioned by many. The fact that I have never seen an estimate of the total cost of this depression to Business, makes the statement all the more daring. Even when compared to normal times, the loss of revenue to Business during the past three years must surely be counted in the multi-billions of dollars. But even so, if concerted action of the right sort is taken before this present depression has vignetted into another period of prosperity (and another period of apathy toward waste and inefficiency), there can be made to result from the current business slump a gain equal to the cumulative, monetary loss of the last three years.

. . . By forcing the Government to eliminate costly practices and needless waste and devastating encroachment upon the affairs of private business. Old stuff! you say. So it is. Sporadic and spasmodic preachments about the dangers of bureaucracy and governmental waste have been made for years. But consider, for a minute, just these three facts:

1—There are more political office-holders and civil-service employees (federal, state, county and municipal) than there are taxpayers. That is, *direct* taxpayers, since everyone pays taxes indirectly.

2—Since 1880, the population has increased approximately two and one-half times, but the number of federal office-holders has increased 4,500 times.

3—One-fifth of the national income (about fourteen billion dollars) is spent by our political office-holders. That is to say: one day's earnings out of every five, on the part of everyone, whether stenographer, plumber, writer or corporation president, goes to support our governmental employees and their work.

Such a list of facts could be continued to the point of fatigue. But those three jolts should be stiff enough to stop you, whether you are the beater tender, the chemist or the paper mill treasurer. Stop you long enough to compel two questions: "Where will it stop?" —and "Can we afford it?"

From June 30, 1923, to June 30, 1931, the number of Federal Government employees increased 77,364. Is that compatible with your experience—or the experience of any other corporation you know? Running the United States Government is a business, just as surely as the operation of a paper mill is a business. In times of depression, should not *all* business retrench, or at least exercise sensible economy?

That increase of 77,000 employees would not in itself inflict such a weight upon the taxpayer if they remained sufficient unto themselves. But they don't. The Interstate Commerce Commission, for instance, had a direct pay roll of 2,410 persons on June 30, 1931—but the number of practitioners registered at the commission at that time was 4,351. These "extras" were paid by railroads, individual corporations, and the public; the expense for whom is probably much greater than the actual expense of the commission.

Nor would the actual cost of the commission and its "extras" be much of a drain of itself if the expense stopped with the cost. But it doesn't. The reason given originally for the establishment of the Interstate Commerce Commission was the correction of unfair practices on the part of a few railroad managers. The course of that experiment has been typical of all other governmental ventures. It started on a small scale. Since then, bit by bit, and imposition by imposition has been piled upon the original purpose of the commission until railroad management today is circumscribed and bound by a veritable wall of prohibitions. Railroads cannot fix the price at which they sell their services; they cannot fix the price at which they employ their labor; they cannot build or extend a line without governmental permission; they cannot issue stocks or bonds without federal permission; they cannot purchase another railroad without permission; they cannot fix the hours of labor for their employees; they cannot fix the value of their property; they cannot keep their accounts except as the commission prescribes; they cannot keep any profits in excess of six per cent—even if they should make them; they cannot abandon a line without governmental permission—even when it is shown (as in one case) that the passenger traffic revenue did not pay the engineer's salary.

Now that we know, from personal experience, the necessity for stringent economy—can we afford this sort of thing?

The Manistee River is a little trout stream in Upper Michigan; a stream not more than six feet deep at practically any point. Even where it empties into Lake Michigan it is never navigable by anything larger than a row-boat. Yet the War Department at Washington sent a large crew of civil engineers and their assistants, fully equipped with transits and surveying instruments, for the purpose of making a survey of this "navigable stream." The survey by this crew took

several weeks and doubtless cost the tax-payers of the United States several thousands of dollars.

Speaking of the War Department—it costs the United States Government over $300,000 a year to fire sunrise guns, a bit of military procedure that means little or nothing.

Can we afford it?

Boyne City is a little town of a few hundred people located in northern Michigan. It is not even a railroad town—unless the adjacent spur of a local logging road is termed a "railroad." Boyne City now has a new postoffice that cost $65,000.

If you are the owner and operator of a pulp or paper mill, this sort of thing is paid for by *you*. If you are an employee of a paper or pulp mill, this sort of thing is paid for by your boss. And his financial prosperity, of course, determines your own.

During the last ten years 5,925,000 government documents have been returned to the superintendent of documents at the government printing office as "undeliverable." During the last ten years over 10,500,000 copies of government publications ordered by various departments "for official use and free distribution" were never so used and were sold as waste paper. During this time, nearly 7,500,000 pieces of government literature, printed for sale, have become obsolete through lack of sale and were disposed of as waste paper. Not long ago, the senate and house folding rooms sold as waste paper over 2,000,000 pieces of government publications which had never been taken from their wrappers. In short: during the last ten years the sheer, almost criminal waste at the Government Printing Office has totaled the staggering amount of 23,899,839 pieces. These figures are from the annual report of George H. Carter, public printer.

During 1931, the Government Printing Office produced 88,524,736 pieces of literature—an increase of nearly a half-million over 1930. All kinds of matter printed for the Federal Government totaled 3,409,447,250 copies, this number including blanks, circulars, cards, notices and other small pieces. Incidentally, that total also includes the production of 23,360,900 franked envelopes—the one kind of government printing that seems not to encounter too much lack of use. The number of franked envelopes supplied members of congress last year was considerably in excess of 25 million, and cost the Government $58,767.00 to produce.

Probably the most prolific distributor of government literature and the most wasteful of all federal departments is the Department of Commerce. Since June 30, 1923, the Department of Commerce has more than doubled its personnel, the number of employees in that department now being in excess of 24,000. Only recently that department moved into its Greek palace (covering three city squares and costing $17,500,000). However, it may be interesting to know that the Department of Commerce building was completed and ready for occupancy more than a year ago. But the department failed to move in until recently, with the result that there was a loss to the taxpayer of $1,150,000 in carrying charges plus the $250,000 needless rent the department paid out before moving.

The Department of Commerce is going to spend in the neighborhood of $45,000,000 this year, a large portion of which will be expended in the production and distribution (by franked mail) of circulars, booklets, letters, "releases," and so forth—the great bulk of which will probably be thrown in the waste basket without being opened.

The Post Office Department plans against an estimated deficit this year of $156,000,000. A large percentage of this deficit is directly chargeable to the franked mail used by the members of congress and the various departments in the distribution of literature they hope will feather their nest, either through re-election or expansion of departmental activities. And there is serious talk about an increase in postal rates!

Calendars are now being put out by the Department of Agriculture. If, through some jobber, you sell a calendar manufacturer his annual supply of paper, you may have every reason to expect a smaller order next year, since now he has the unfair competition of the Government.

In four different state institutions that I know of this is the procedure followed: If a state-employed carpenter happens to break the claw of his hammer, or a bit while drilling a hole, the institution, in order to replace that broken tool, *must buy a complete set of tools to get the one broken part.* The institution cannot buy a hammer or a brace and bit alone, but must buy a complete set of tools, needed or not.

At Washington there are yet in force specifications for timbers, hardware, and other building necessities which have been obsolete in the lumber and iron trade for decades. Yet when a federal building of any kind is to be erected, the building materials used must follow the obsolete specifications of the Government. This means trimming standard sizes of joints, rafters, or what not to the unusual, non-standard size—all at increased expense and no increase in efficiency.

Can we afford it? Can we continue to permit the growth of these barnacles to the Ship of State? The tremendous cost of government is, in large part, directly chargeable to sheer waste and duplication of effort. And the cost of government comes directly, *and only*, from the taxes paid by you and me.

Suggestions: When the Department of Commerce, the Department of Agriculture, or any other governmental department writes you for information, refuse to give it to them. If we do not refuse we contribute to their costly game. Whether you are employer or employee, write, not once, but many times, to your senator and representative at Washington, urging, if not demanding, the curtailment of government expenditures in every direction. Write to Representative L. W. Douglas (Arizona), who is a member of the appropriations committee of the House and who is leading the fight against bureaucratic waste and expenditure, setting forth your moral support in his work. Interest the editor of your local newspaper in the drive against government waste and inefficiency. Interest the members of your local Kiwanis, Rotary, or Commercial Club —or your Bible Class, fraternity or lodge—in doing likewise.

We have got to stop government waste before that waste puts a stop to us—our businesses and our jobs.

The waste at Washington is hard to stop because most folks have a feeling that the expense of it is paid by someone else. They do not see the passage of actual currency from pocketbooks to political office-holders,

and so fail to recognize that fifty dollars spent by the Federal Government is fifty large round dollars that many men must work an entire week for. During the years 1923 to 1930 we were so busy making money we were apathetic to the encroachment of governmental restrictions or the increase of government waste. We were too busy to read—too busy to investigate—too busy to care. That same apathetic condition will prevail again when there is a return of universal prosperity. Hence the necessity for immediate and severe action against our needless governmental departments. If we *do* take advantage of the present depression to insist upon governmental economy—the elimination of many bureaus, and the restriction of countless others—then we will have made the depression turn us a gain—a dollars and cents gain—equal to what we might have earned had the false prosperity of 1928-1929 continued unabated.

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Paper Permanency

as related to Sizing and Acidity

By JESSIE E. MINOR
Springfield, Mass.

A VERY interesting summary of the effect of rosin and animal sizing on the permanence quality of papers is contained in the following data. The samples used for this data were the standard grades of bonds and ledgers from various mills. They were tested for folding endurance then hung for three years on the wall in a city atmosphere of considerable soft coal smoke and again tested.

TABLE I

Relation of Rosin and Animal Sizing to Paper Permanence

Paper No.	Rosin	Animal Size	Ash	Total Acidity H_2SO_4	Ink Penetration Seconds	Folding Endurance % Retained, 3 Yrs. Machine	Cross
1	0.87%	3.7%	0.6%	.59%	85	19.4%	24.3%
2	0.98	7.6	1.0	.57	1040	76.2	109.4
3	1.01	3.7	0.4	.53	50	24.4	21.4
4	1.19	6.3	1.0	1.18	170	47.6	46.6
5	1.23	3.7	0.4	.58	40	19.5	18.9
6	1.25	5.2	0.9	.47	135	57.5	61.7
7	1.29	5.1	0.5	.67	40	45.0	19.8
8	1.47	3.1	0.4	.52	80	23.6	12.6
9	1.55	2.5	0.4	.68	14	17.6	7.6
10	1.58	6.0	1.0	.65	600	64.0	15.8
11	1.85	2.7	0.6	.72	115	11.2	12.5
12	1.90	2.6	0.6	.69	75	12.5	10.9
13	2.00	5.2	1.4	1.11	40	10.0	7.3
14	2.33	4.2	0.5	.81	28	17.4	16.4
15	2.50	3.3	0.6	.59	65	21.4	16.5
16	2.51	4.8	1.2	.94	125	26.3	24.2
17	3.17	1.8	0.7	.67	170	10.9	10.8

If these results are arranged in the order of amount of animal size, then averaged for each four tests in order to decrease the effect of individual variations, they appear as follows:

TABLE II

Paper Number	Rosin Size	Animal Size	Total Acidity	Fold Retention Machine	Cross
1	2.12%	2.40%	.69%	13.1%	10.5%
2	1.59	3.45	.57	21.0	18.1
3	1.79	4.45	.74	28.3	20.5
4	1.51	5.68	.85	44.8	32.9
5	.98	7.60	.57	76.2	109.4

If the table is arranged in the order of increasing rosin content, then averaged for each four tests in order to decrease the effect of individual variations, it appears as follows:

TABLE III

Paper Number	Rosin Size	Animal Size	Total Acidity	Fold Retention Machine	Cross
1	1.01%	5.30%	.72%	41.9%	50.4%
2	1.31	4.30	.56	36.4	28.3
3	1.72	3.50	.69	26.4	11.7
4	2.34	4.40	.86	18.8	16.1
5	3.17	1.80	.67	10.9	10.8

If the table is arranged in the order of increasing acidity, then averaged for each four tests to decrease the effect of individual variations, it appears as follows:

TABLE IV

Paper Number	Rosin Size	Animal Size	Total Acidity	Fold Retention Machine	Cross
1	1.18%	4.9%	.52%	45.4%	51.3%
2	1.53	2.8	.60	16.7	17.7
3	1.90	3.9	.67	34.4	13.5
4	2.15	3.6	.79	16.9	16.0
5	1.60	5.8	1.15	28.8	27.0

These figures would indicate that for papers aged in the presence of light and city atmosphere, the rosin content was a prominent factor in degradation, while the amount of tub sizing with animal size was equally prominent in its protection, but that the acidities of such similarly degraded papers bear no relation to the loss of folding strength.

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How Much Pulpwood in a Conical Pile?

By W. F. SCHAPHORST, M. E.

ACCORDING to authentic figures which I have before me, pulpwood piled loosely in blocks of 24 inches and dropped from a cable conveyor occupies 163 cubic feet of volume for every cord of 128 cubic feet closely piled. In view of the fact that closely piled wood is used when measuring cordage, it is necessary to use the figure 163 cu. ft. instead of 128.

Also, loosely piled pulpwood in huge piles such as are commonly built up assumes a conical form. It has been observed also that each pile has the same angle of repose. Every material has an angle of repose of its own—sand, gravel, coal, wheat, corn, oats, flax, ashes, sawdust, pulpwood, etc.

In view of the above, knowing the angle of repose for pulpwood, it is a simple matter to develop a formula which gives us the cordage of any conical pile of pulpwood. This is the formula:—

$$\text{Cordage} = 0.000636D^3$$

where D is the diameter of the base of the pile in feet.

For example if the diameter of the base of the pile is 300 ft. the cordage is:

$$0.000636 \times 300 \times 300 \times 300 = 17{,}150 \text{ cords.}$$

❖ ❖ ❖

The possession of knowledge, prestige, power or money makes no man great. The actual "greatness" of any man consists solely in the use of these things to bring, or to create, or to increase happiness and contentment into the lives of other people.—Making Paper.

The Paper Industry Safety Contest

July 1 to January 31 (Cumulative)

13 Mills Keep Perfect Record

PERFECT SCORES

Division I—Paper and Pulp Mills

	ENTRANT	MILL	LOCATION
GROUP A			
GROUP B	The Champion Coated Paper Co.	No. 1	Hamilton, Ohio
GROUP C	Delk Paper & Pulp Co.	Eau Claire	Wisconsin
	Pioneer Paper Co.	Los Angeles	California
	Cornell Wood Products Co.	Cornell	Wisconsin
	U. S. Envelope Co.	Morgan Paper Div.	Lititz, Pa.
GROUP D	International Paper Co.	Livermore Falls	Maine
	Continental Paper & Bag Corp.	Ashland	New Hampshire
	U. S. Gypsum Co.	No. Kansas City	Missouri
	International Paper Co.	Riley	Maine
	Hollingsworth & Whitney Co.	Madison	Maine

Division II—Remanufacturing

Oxford Paper Co.	No. 2	Rumford, Maine
Kimberly-Clark Corp.	Atlas	Appleton, Wis.
Bemis Bros. Bag Co.	E. Pepperell	Massachusetts

IMPERFECT SCORES—Division I

	Key	Rank	Points Credit	Points Debit
GROUP A	PA-10	1	959.760	
	PA- 2	2	725.152	
	PA- 3	3	690.736	
	PA-11	4	631.792	
	PA- 7	5	384.432	
	PA- 5	6	352.560	
	PA-12	7	91.504	
	PA- 1	8		135.504
GROUP B	PB-16	2	907.520	
	PB-18	3	885.152	
	PB- 4	4	870.688	
	PB- 9	5	847.040	
	PB-23	6	820.864	
	PB-15	7	787.088	
	PB-27	8	745.776	
	PB-24	9	703.104	
	PB-30	10	701.056	
	PB-14	11	686.560	
	PB-20	12	657.920	
	PB-19	13	603.152	
	PB- 1	14	601.184	
	PB- 8	15	598.800	
	PA- 4	16	559.648	
	PB-13	17	512.688	
	PB- 3	18	395.328	
	PB-25	19	394.416	
	PB-17	20	319.184	
	PB- 2	21	259.408	
	PA- 8	22	243.408	
	PB-21	23	215.984	
	PB-12	24		130.240
	PB-10	25		558.752
	PC- 8	26		704.672
	PB- 6	27		716.608
	PB- 7	28		1,159.088

Division II

	RA- 1	4	933.368	
	RC-10	5	731.456	
	RC- 9	6	566.576	
	RC- 2	7	548.784	
	RD- 1	8	358.048	
	RC- 8	9	329.968	
	RD- 3	10	300.624	
	RC- 5	11	129.696	
	RC- 3	12	121.504	
	RB- 1	13	84.752	
	RC- 6	14	68.848	
	RC-11	15		290.304

	Key	Rank	Points Credit	Points Debit
GROUP C	PC-25	5	865.984	
	PC-51	6	863.408	
	PC-34	7	863.360	
	PC- 9	8	711.712	
	PC-10	9	707.408	
	PC-43	10	668.032	
	PC-50	11	662.512	
	PC-33	12	623.952	
	PC-12	13	550.160	
	PC-11	14	485.664	
	PC-18	15	448.528	
	PC-44	16	433.136	
	PC- 3	17	397.120	
	*PC-38	18	292.512	
	PC-35	19	284.176	
	PC-20	20	243.936	
	PC- 1	21	210.256	
	PC-39	22	204.448	
	PC-37	23	186.448	
	PC-28	24	106.368	
	PC-19	25	39.120	
	PC- 2	26	28.128	
	PC-21	27	1.408	
	PC-31	28		121.312
	PC- 4	29		168.288
	PC-30	30		295.728
	PC-42	31		322.416
	PC-56	32		366.080
	PC- 7	33		387.312
	PC-27	34		390.544
	PC-24	35		441.648
	PC-36	36		465.376
	PC-57	37		562.112
	PC-53	38		697.968
	PC-52	39		700.592
	**PC-40	40		734.800
	PC-17	41		789.728
	PC- 5	42		1,132.880
	PC- 6	43		1,158.656
	PC-58	44		1,395.424
	PC-13	45		2,234.736
	PC-47	46		2,869.728
GROUP D	PC-45	6	474.704	
	PC-46	7	192.384	
	PD- 2	8		139.680
	PD-12	9		261.712
	PD- 4	10		455.008

No withdrawals since Dec. 31.
(*) Days lost revised because of error in reporting.
(**) No September report.
No January Report: PA-6; PC-49; PD-10; RD-4.

◆ ALTHOUGH most industrial eye accidents are preventable, American industry every year permits the loss of one or both eyes by more than 2,000 workmen, 300,000 minor eye injuries, and the waste of approximately $50,000,000 in time lost, compensation payments, and medical bills. These facts were brought out by speakers before the session on "The Eye—Its Relation to Safety," sponsored by the National Society for the Prevention of Blindness, at the Third Annual Greater New York Safety Conference, held in New York City, February 24-25.

◆ Rooney Names Convention Committee Chairmen

Under the leadership of Past President Fred J. Rooney, plans are rapidly taking shape for the Thirteenth Annual Convention of the American Pulp and Paper Mill Superintendents Association which will be held June 2, 3 and 4 at the Hotel Statler, Buffalo, N. Y.

As general chairman of the convention committee, Mr. Rooney has appointed the following chairmen of subcommittees: Finance—F. C. Nostrant, The Upson Co., Lockport, N. Y.; Program—F. W. Harney, The Upson Co.; Transportation and Mill Visitation—John Nolan, International Paper Co., Tonawanda, N. Y.; Attendance and Reception—B. D. Millidge, Howard Smith Paper Mills, Ltd., Cornwall, Ont.; Registration—Robert W. Price, Niagara Paper Mills, Lockport, N. Y.; Entertainment—F. D. Bowman, Carborundum Co., Niagara Falls, N. Y.; Ladies' Entertainment—Mrs. Fred J. Rooney, Lockport, N. Y.; Golf—J. R. Hoover, Hubbs & Howe, Buffalo; Secretary of the Convention Committee—R. C. Rooney, Lockport, N. Y.

Mr. Rooney is working for a large attendance at the Convention by all members of the association. He believes this convention to be even more important than previous ones, as it is absolutely necessary for all superintendents to operate their plants at the highest degree of efficiency under existing conditions. The program for the convention is being arranged with the sole thought of providing information that will assist the superintendents in attaining this objective. Every phase of operation and management within the scope of a pulp and paper mill superintendent will be treated on the program.

◆ Conditions Alter Newsprint Production Reports

R. S. Kellogg, secretary of the News Print Service Bureau, announces a revised form of reports. Production reports hereafter will not carry capacity figures and operating percentages for the newsprint industry. The chief reason for this change is that such figures no longer coincide with the hard facts of operation, Mr. Kellogg says.

Based upon operating records during the best times over a period of years and with the addition of new machines, a total of 19,000 tons daily capacity for the North American newsprint industry was calculated in the early part of 1931. Now the picture has changed. Not only are there no more machines building, but it is also obvious that some machines cannot be operated at present price levels. In other words, the capacity of the industry for practical purposes cannot be determined simply by compiling the possible speeds and trims of all existing machines—whether they are running or not—but is definitely limited by a multitude of economic factors.

For these reasons the Bureau reports are to be confined to actual production, shipments and stocks on hand, what might be produced under favorable conditions being already a matter of sufficient record, according to Mr. Kellogg.

◆ American Chemical Society Has New Chicago Offices

The American Chemical Society has signed a five-year renewable lease for facilities in the Midland Building, one of Chicago's modern office structures, twenty-two stories high, located at 176 West Adams Street. This tenancy gives members of the Chicago Section of the Society the use of the Midland Club quarters for meetings.

At the same time, the members of the Chicago Chemists Club took over club quarters on one floor of the building, which also gives them the privilege of Midland Club facilities. The Chemists Club will be able to furnish regular club accommodations, including dining service and sleeping quarters.

Several chemical companies now have their Chicago quarters in the building and it is already being thought of as the Chemical Center of the Midwest.

◆ THE LUNKENHEIMER CO., Cincinnati, Ohio, announces the death on February 7 of Mr. Lane Thompson, a member of its organization.

Trends in Raw Materials of Paper Making Discussed

Timber Economics Engaged Interest of Pulp and Paper Mill Technologists and Foresters at Annual Meeting of Association and Its Affiliated Bodies.

THE series of meetings that made up this year's convention of the American Paper and Pulp Association opened on Monday morning, February 15, with a highly interesting and well attended joint gathering of T. A. P. P. I. and the Pulpwood Department for the discussion of papers relating to fibrous raw materials, and closed on Thursday evening, February 18, with a banquet at which the principal speaker was Dr. Henry M. Wriston, president of Lawrence College and director of the Institute of Paper Chemistry, Appleton, Wis.

Secretary Charles W. Boyce of the American Paper and Pulp Association, himself a forester, made the arrangements for this joint conference of foresters, woodmen and pulp and paper mill technologists at which some interesting facts were brought out concerning the growing use of woods other than spruce in the manufacture of pulp and paper.

George N. Ostrander, Finch, Pruyn & Co., Inc., chairman of the Pulpwood Committee of the American Paper and Pulp Association, presided at the morning sitting, and Dr. J. L. Parsons, Hammermill Paper Company, chairman of the Raw Materials Division of the Technical Association, occupied the chair in the afternoon. The attendance at both sittings taxed the capacity of the room and the utmost interest was taken in the proceedings by a representative gathering of foresters, mill woodroom men, chemists and engineers, besides executives and students of timber economics.

Chairman Ostrander opened the first sitting with a few words of welcome in the course of which he commented on the common problems of technical men and wood department managers, saying that there was room for economy in a closer co-operation between woods operators and the men in the woodrooms of pulp and paper mills through a more intimate relationship by personal contacts in visits of foresters to woodrooms and vice versa. Greetings were also extended by General Manager Jesse H. Neal, who complimented the officers in charge of arrangements on such a fine representative attendance as he saw before him.

Pulpwood Storage and Handling

R. D. Stephens, Eastern Manufacturing Company, started a discussion on the storage and handling of pulpwood in the millyard in relation to causes of wood deterioration which brought many members to their feet with contributions on the subject. He made the point that poorly piled wood was subject to decay through infection by fungi, which was the cause of a considerable loss. Other factors of wood deterioration in the millyard were instanced, such as the condition of the piling ground, of the wood when received and methods of piling. The surface of the ground on which the wood is piled, which is usually wet, was referred to as a fertile breeding place for fungi. He described some of the conditions in actual operations which promoted fungus attacks and as a remedy suggested cleaning out the areas in which wood is to be piled and filling in with cinders and coarse gravel so as to permit of drainage, as wet grounds encouraged the growth of fungi. Air circulation should be aimed at in piling the wood and the wood should not remain on the storage ground for more than a year. If care was taken to prevent infected wood getting into the pile at the start, the pile might and should be soaked at regular intervals with water from water towers, but the storage grounds should receive primary attention by being well drained and kept free of debris, such as bark, broken wood and foreign growth.

In Mr. Stephens' opinion, the woods most susceptible to rot were fir and balsam.

Pulping Properties of Different Woods

C. E. Curran, Forest Products Laboratory, made a valuable contribution to the subject of character and volume of pulps obtained from different woods, in the course of which he demonstrated that spruce as a source of paper pulp was being rapidly displaced by other woods, particularly western hemlock. He gave physical data pertaining to various pulpwoods, citing the number of sticks per cord respectively in a range of wood species which included white spruce, Norway spruce, eastern hemlock, jackpine, longleaf pine, slash pine, pine waste, shortleaf pine, Douglas fir, cypress, western hemlock, white birch, aspen, sugar maple and black gum.

With the exception of longleaf pine, slash pine and Douglas fir, western hemlock ranked highest in weight of cellulose per cord. The number of sticks to a cord varied greatly with different woods, though mill waste western hemlock stood highest at 463, while Washington Douglas fir was lowest at 31.

Chemical studies as to percentages of cellulose, alpha cellulose and lignin contained in the woods revealed some interesting information. Thus white spruce from upper Michigan gave a high yield of 60.3 per cent cellulose and 43.6 per cent alpha cellulose, as against 39.3 per cent for western hemlock, the highest alpha cellulose content of which was 43.7. The lignin of white spruce averaged about 30 per cent and of western hemlock the same or a trifle higher. Slash pine gave an average yield of 60 per cent cellulose and 43 per cent alpha cellulose, though one shipment of slash pine from Florida gave a yield of 62.2 per cent cellulose and 47 per cent alpha cellulose; the lignin percentage was 28. It should be stated that the highest yield of cellulose reported in any of the woods examined was that of aspen from Minnesota, with a figure of 66.5 and only 23.5 per cent of lignin. The alpha cellulose content of this aspen was also high, standing at 54.8, but the number of sticks per cord was low at 77.

An estimation of the weight per cubic foot of chips from various woods showed no great difference, but the cellulose yield from chips fluctuated according to species, longleaf pine standing highest, followed by sugar maple, slash pine, jack pine and spruce.

A comparison of pulpwoods grown in the northwestern states and in Canada, respectively, showed a variation in the number of sticks per cord ranging from 114 to 39, while the weight per cubic foot ranged from 21 lbs. to 26 lbs.; the average solid wood content per cubic foot of these woods ranged from 81.8 to 86.2.

Interesting, as determining the character of the pulp obtained from different woods were the figures of alpha cellulose content. The production per cord of alpha cellulose for the different woods was stated as follows: Spruce, 928 lbs.; eastern hemlock, 800 lbs.; western hemlock, 1025 lbs.; jackpine, 892 lbs.; longleaf pine, 1140 lbs.; slash pine, 985 lbs.; shortleaf pine, 890 lbs.; Douglas fir, 1200 lbs.; birch, 1082 lbs. (there being a wide spread in this instance between total cellulose and alpha cellulose); aspen, 995 lbs.; black gum, 1152 lbs.

Mr. Curran said that a mill buying pulpwood might very well keep track of the sources of its material and by

sampling a cord from a trainload received from a given area could tell where the best wood was coming from.

Speaking of some of the factors which influence the character of pulp yield, he advocated the purchase of straight sticks of wood from 8 to 14 feet long, avoiding short crooked sticks.

After Professor Recknagel had pointed out an error in one of the tables which was handed around by Mr. Curran, a color for heartwood being given for slash pine which has no heartwood, and so acknowledged by Mr. Curran, the chairman called for the next paper, which was on pulpwood grading by H. L. Churchill, Finch, Pruyn & Co., Inc.

Factors in the Grading of Pulpwood

Mr. Churchill's paper was concerned largely with the variables affecting pulpwood values. To make plain his object, he gave the dictionary definition of a "variable," as a quantity that may increase or decrease continuously or discontinuously. Variance was a difference that produced dispute or controversy, disagreement, dissensions, discord or quarrel, and pulpwood, whether rough or peeled, was all that and a whole lot more.

This by way of indicating how difficult a problem the grading of pulpwood was. He enumerated all the snags encountered in the grading of 4-foot or 2-foot wood on a cost and value basis. What was a perfect stick, and what a perfect cord of wood, he asked. These and other questions were difficult to answer, but he gave a thorough discussion of the subject and listed factors which should be considered in any grading operation.

Figures of relative values were given based on a cord of 2-foot peeled spruce bolts 6 inches and up in diameter which he rated as 100. A similar cord of 4-foot bolts would be valued at 97.5; a cord of 2-foot rough spruce bolts of similar specification would be valued at 86 and a cord of 4-foot rough spruce bolts of the same specifications, 83.85.

Values for balsam were given in the same order; based on the understanding that a cord of perfect balsam wood yields only 50 per cent of that from a cord of perfect spruce wood. Therefore, 10 per cent of balsam would lower the yield about 2 per cent; 20 per cent of balsam, 4 per cent, and 50 per cent of balsam, 10 per cent.

The grading of wood and defective material was a complicated problem and little has been done in the direction of a workable agreement between buyer and seller.

What it meant to include balsam and culled wood with spruce in manufacturing operations was described by Mr. Churchill. Starting with a purchase of 10,000 cords of perfect spruce wood at a price of, say $16 a cord, and at the same time buying an equal number of cords of wood 30 per cent spruce and 70 per cent balsam, together with 10 per cent cull material, the increase in cost to grind would be $2.13, while the yield in pulp would be only 77 per cent, making the cost of production from mixed wood $23.55. In other words, a ton of pulp from ideal spruce would have cost only 68 per cent of the cost of the mixed wood. On this basis, with $16 the cost of ideal spruce, $10.19 would be right for the other wood, though the relative value would be actually lower, since more sulphite must be used to give strength, and the daily tonnage of paper would be lower by trouble on the machine.

Mr. Churchill's paper was accompanied by an informing table of relative pulpwood values, based on peeled and rough wood, sound spruce, cull and different percentages of balsam. In the discussion which followed emphasis was placed by R. S. Kellogg on care in buying wood. Some mills were now buying wood on the weight basis, but he thought that if wood was six times dearer than it is today, three times more care would be used in buying it.

The last speaker at the forenoon sitting was Ripley Bowman, secretary, Timber Conservation Board, who explained the aim and purpose of the board which was to study the economic aspects of the forest products industry. It is a temporary body whose existence will terminate at the end of June this year, though a similar body to study newsprint materials may be appointed. Reference is made to the program and work of the Timber Conservation Board in an editorial article in THE PAPER INDUSTRY for January at page 1196.

Future Papermaking Materials

At the afternoon sitting, the chair was taken by Dr. J. L. Parsons as representative of the Technical Association. Before the papers were presented, a moving picture demonstration was given of logging and mill operations as conducted by Finch, Pruyn & Co., Inc. This proved a welcome feature of the proceedings, and considerable interest was taken in the scenes presented.

As chairman of the Raw Materials Division of T. A. P. P. I., Doctor Parsons gave an account of the objectives of this committee. One of the units of the Raw Materials Division is a Committee on Fibrous Raw Materials headed by John Traquair, Mead Corporation. The interests of the committee include a study of wood, straws and grasses for the pulp manufacturer on the one hand and of pulps, rags, linters, and old papers for the paper manufacturer on the other. The first-named materials might be considered native raw materials and that for the papermaker, process raw materials. It is the aim of the committee to collect and disseminate information on the efficient utilization of these materials, as well as to study scources of supply, including that of fibrous substances of potential value.

The field of fibrous raw materials has not been studied heretofore by the Technical Association and suggestions are invited by the committee to aid them in their work.

Cornstalks and Straw Out of the Picture

In a discussion of "Fibrous Materials for Papermaking in the Future," John Traquair gave an informing account of the numerous vegetable growths that have been used or proposed for use in the manufacture of paper pulp. No new fibrous raw material had been introduced within the past fifty years, and of the 2,000 species, kinds or varieties of substances proposed, only about a dozen were in actual use. He discussed the efforts to pulp cornstalks, one of our largest potential sources of cellulose, of which there was available in the corn belt, stretching from Ohio to Nebraska, about 100,000,000 tons and at least 50,000,000 tons in a very concentrated area. Pulp from cornstalks had no chance at present against competing pulps. Assuming a conversion figure of $20 a ton, the cost of pulp at the mill would range from $35 to $45 a ton in slush form, and to this must be added the cost of drying and marketing.

He spoke of the straws of wheat, oats, barley and rye. Straw is mainly used for making strawboard and the consumption is about 600,000 tons annually. Strawboard mills have, however, been moving westward and replacing straw with waste papers as a raw material. The production of straw varies with the seasons and a dry year cuts down the yield. Slush bleached straw pulp can be produced at a cost of $22.50 to $30 a ton. At present prices for competing pulp, straw had interesting possibilities; that is, wheat straw.

As to flax straw, of which there is a potential supply of 1,000,000 tons, of which 200,000 tons are used in the manufacture of upholstery tow and insulating material, the rest being burned, it was said that the cost of collecting, threshing and bailing it was similar to wheat straw, but to this has to be added the cost of producing the flax tow. As flax tow is almost pure cellulose, a yield of 85 per cent might be expected from it. The outlook for this material was not encouraging.

Mr. Traquair discussed briefly the possibilities of hemp, bagasse, giant cane and saw grass. The only outlook for bagasse appeared to be in the manufacture of a board material as a wood substitute, though in Cuba a bleached pulp equal to bleached soda pulp had been produced and shipped in a wet pressed condition.

Saw grass grows abundantly in the State of Florida, but the yield of pulp by the soda process was under 30 per cent. The fiber was thin and long and the paper made from it had unusual properties, Mr. Traquair said. Considerable experimental work would be necessary before saw grass fiber could be available. In summing up, he said that of the various plants and grasses proposed as raw material for paper, few, if any, had passed the experimental stage owing to difficulties and expense of collection, transportation and conversion.

An interesting account of developments in the use of old papers and magazines was given, statistics of prices and consumption being included, and the use of linters as well as the method of preparing this material from cottonseed

received attention, production figures being attached to the summary.

Wood Is Still Preferred Material

Royal S. Kellogg, secretary, News Print Service Bureau, discussed Mr. Traquair's report. He started out by asking if he meant that straws or cornstalks could be converted into bleached pulp at $20 a ton and saying that there was no difference in the cost whether straw or wood was used. Unlike cereal straws, pulpwood was permanently cheap now and forever except in a time of a major cataclysm like war. As for cornstalks they were never in the picture except as a stock selling proposition, and they might as well be forgotten. Straw for most purposes was entirely out of it, as aside from the disadvantages of a higher cost than wood there was also the possibility of a crop failure while the wood crop was relatively stable. One of his earliest recollections as a boy in New York was the sight of great wagonloads of straw passing on their way to paper mills. The paper mill was still there, but straw was no longer used. There was no question but that grass and bagasse were permanently out of the picture, as well as flax. Saw grass was a stock promotion scheme, and linters at $60 to $80 a ton could not be considered.

Future of Water Transportation

In any dependence on an annual crop of material mills would have to be located at some interior point which would place them at a disadvantage, as a number of mills were now being established at tidewater points, and it must be remembered that water transportation is going to play a big part in the future on account of lower freight costs. A complete revolution in the paper industry through the use of wood had started within the lifetime of those present and the use of any other raw material would be a regressive step. The promoters of cornstalk paper got money out of people who were not connected with the paper industry. The right course was to base our calculation on the assumption that we have a permanent supply of wood in the United States and Canada, but it should be borne in mind that the consumption of nothing goes up indefinitely and neither does production. The peak of production of newsprint paper was in 1929 and it will not go any higher, as the curve of consumption appears to be flattening out.

H. J. Skinner said he had had some experience with bagasse and could confirm everything that Mr. Traquair and Mr. Kellogg had said concerning these and other crop products. Cornstalks had no chance compared with sugar cane which was dumped down at the mill, while the other had to be collected out of many districts.

Prof. R. H. McKee made a contribution to the subject which led Mr. Kellogg to ask him where he had been hibernating since 1924, as the statistics quoted by him had been outdated since that time.

How Spruce Wood Is Being Displaced

In a paper on "Effect of Kinds and Qualities of Pulpwood Upon Pulp Quality" Dr. Otto Kress, director of the Institute of Paper Chemistry, gave some revealing figures concerning the substitution of other woods for spruce in the manufacture of pulp during the past twenty years. Thus he showed that the spruce wood of domestic growth consumed in 1910 amounted to 1,473,542 cords, besides a consumption of 902,407 cords of imported spruce, while in 1930 the consumption was 1,842,051 and 888,255 cords of domestic and imported, respectively, an increase of 15.2 per cent only over the 1910 consumption. On the other hand, balsam fir consumption grew from a total of 132,362 cords in 1910 to a total of 407,396 cords in 1930, or 300 per cent. The greatest increase in the use of another wood over spruce was shown in hemlock, which in 1910 showed a consumption of 610,478 cords and in 1930 1,185,711 cords. Doctor Kress accounted for this increase in the use of hemlock partly by its consumption for the manufacture of bleached sulphite pulp in the Lake States and to the development of the bleached sulphite industry on the Pacific Coast, where western hemlock is the raw material. He made the significant statement that so long as we have western hemlock we need not worry about spruce.

Other figures of consumption cited by him pointed to changes in the woods used for the manufacture of different pulps. Thus attention was called by him to the increased use of jackpine for kraft or sulphate pulp manufacture. He said it was interesting to note that in the 1910 census the yellow pines were not listed separately, but were included under the general heading of pines, with a total consumption of 105,882 cords, whereas there was reported in 1930 a consumption of 997,195 cords of southern yellow pine, practically all of which was converted into kraft pulp, an industry which has been built up in the South only within the past two years.

Definite Substitution of Species

It was evident from the figures of wood consumption which accompanied his paper that a very definite substitution of species of wood has taken place during the past twenty years, attributed by him to the scarcity of certain woods and correspondingly higher prices for these wood species in certain pulpmaking localities. The introduction of new species had originated in the regional shift of the industry to new localities, not to mention changes in processes of pulping to permit the use of woods formerly deemed unsuitable.

A few of the changes referred to included the manufacture of semi-chemical pulp, the manufacture of bleached hemlock, sulphite and of kraft from yellow pine. It was noted that in the Lake States some poplar wood was being reduced by the sulphite process where a short-fibered bleached filler pulp was wanted. Then there was the pulping of jackpine, as well as the use of Douglas fir and other species in localities where economic conditions favored the development of a balanced pulp and paper mill unit.

The table accompanying Doctor Kress's paper is of so much interest to pulp producers and students of the subject that it is appended:

WOOD CONSUMED IN THE MANUFACTURE OF WOODPULP

YEAR	KIND OF WOOD		QUANTITY Cords	DISTRIBUTION Per Cent
1910	Spruce	Dom.	1,473,542	36.0
		Imp.	902,407	22.0
	Hemlock		610,478	14.9
	Poplar	Dom.	315,717	7.7
		Imp.	45,359	1.1
	Balsam Fir		132,362	3.2
	Pine		105,882	2.6
	Beach		44,265	1.1
	Cottonwood		31,099	0.8
	White Fir		30,845	0.8
	Slab Wood and Other Mill Waste		262,637	6.4
	All Other Species		139,713	3.4
	TOTAL		4,094,306	
1930	Spruce	Dom.	1,842,251	25.7
		Imp.	888,255	12.4
	Hemlock		1,185,711	16.6
	Yellow Pine (Southern)		997,195	14.0
	Poplar	Dom.	301,897	4.2
		Imp.	159,092	2.3
	Balsam Fir	Dom.	358,461	5.0
		Imp.	48,935	0.7
	Jack Pine		248,072	3.4
	Chestnut	Dom.	156,299	2.2
	Yellow Poplar	Dom.	97,795	1.4
	Beech, Birch and Maple		68,848	1.0
	White Fir	Dom.	62,739	0.9
	Gum	Dom.	41,825	0.6
	Tamarack (Larch)		40,054	0.6
	Other Wood		64,057	0.9
	Slabs and Mill Waste		594,102	8.3
	TOTAL		7,155,588	

Price Cutting on Pulps

Charles W. Boyce, secretary, American Paper and Pulp Association, was the last on the program, with a paper on "Pulp Manufacturing Costs." He said that today's pulp prices were from 35 to 45 per cent lower than they were two years ago, having been forced down by fierce competition participated in by all producing countries. The brunt of the battle was felt most in the United States on account of monetary advantages and the fact that new low-cost American production had entered the eastern markets. Whatever its ultimate results might be, Mr. Boyce said its immediate effect was to focus attention upon manufacturing costs, which have become more and more important with the progress of the international struggle. Prices had now fallen below over-all costs and threatened the bare-out-of-pocket costs of the most favorable mills.

With pulp exporting countries going off the gold standard last year, competition became keener. The domestic producer was caught at a disadvantage and he is being subjected to a severe squeezing process, which he could not have escaped even if there had been no currency debasement, for the top-heavy structure of the world woodpulp industry was bound to topple.

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◆ The Police Gazette

Well-known 85-year-old periodical, has been discontinued as a result of the insolvency of its publisher, the Richard K. Fox Publishing Company. The petitioners demanding a receiver were Perkins-Goodwin Company, Bulkley-Dunton and Company and Herman Scott Chalfant, Inc.

American Paper and Pulp Ass'n Holds Annual Meeting

Activities of the Year Set Forth and Resolutions Adopted

THE annual general meeting of the American Paper and Pulp Association was called to order in the banquet hall of the Hotel Pennsylvania, New York, on Thursday forenoon, February 18, by President S. L. Willson, who begins his second term of office in accordance with the revised Constitution. After a few words of greeting he made his annual report to the association. In this he dealt largely in generalities, leaving details, as he said, to other executives who had more direct contact with various departments and committees.

People Who Want Impossibilities

Referring to a tendency on the part of some members of the organization to look for impossibilities in the direction of restricting production or organizing other branches of the industry into association groups, not to speak of raising prices and showing them how to turn losses into profit, or why a five-day week and a six-hour day cannot be established, and an end put to the business depression, he said such things were mentioned, not in the way of complaint or as a wail, but merely to record the fact that everybody during a period like the present was inclined to be hypercritical, be impressed with defects and blind to benefits that might be accruing.

Association Reorganized

He admitted that, while the association had done constructive work, it had by no means accomplished all that it hoped for, not from lack of effort but from lack of means. He reviewed the work of a representative group of the industry which had met in the summer of 1928 to discuss ways and means of reorganizing the association so as to make it more useful to all engaged in the manufacture of paper and pulp. A reorganization committee was appointed, headed by Col. B. A. Franklin, which took prompt action. It proposed a practical plan providing for a readjustment of dues on an equitable basis and an increased income for the carrying out of association activities. A general manager was chosen for the association, Jesse H. Neal being appointed after a process of elimination of other candidates for the position.

The new assessment plan was put into effect, but with disconcerting results; it called for a larger amount of dues to be paid than under the old arbitrary method and there were many resignations from membership. The funds of the association dwindled to such a point that each member of the Executive Committee had to contribute by underwriting the current expenses to the extent of advancing $1,500 each. In this way a fund of $12,000 was raised, an amount which had not yet been refunded.

Efforts to win back members who had resigned were almost 100 per cent successful, but income was materially reduced and additional expenses were incurred. The old Cost Association was made a department of the parent organization and had to be financed. The financial obligations of other affiliated organizations were also assumed and it was believed that the new assessment plan of 25 cents per $1,000 of sales for manufacturers, and 15 cents per $1,000 of sales for converters would provide ample funds and leave a small surplus balance. During 1930, with the funds based on 1929 sales, the organization broke even in its operations but was unable to reimburse the members of the Executive Committee, or to pay off or reduce the inherited balances due to attorneys acting for the Tariff Committee and to the Import Committee for statistical work done for the Tariff Committee. The effects of the depression began to be felt, with sales in 1930 off 25 per cent. This reduced the income of the association correspondingly, and to meet this new financial condition, the expenses of the association were reduced in different ways, besides cuts in salaries and reduction in forces.

The association was faced with a further reduction of income during the ensuing year because of lower sales and resignations for economic or other reasons, so that it would be necessary to eliminate some activities or dispense with some of the personnel, if an increase in the rate of assessment were not put in force so that the gross amount received should be equal to the returns based on sales in 1929. There was the alternative of an independent assessment to cover present deficits, leaving the rates for dues at the old figure. An investigation of association expenses and activities for the purpose of determining the best course to pursue has been authorized by the officers and the Executive Committee of the association.

It was the opinion of the Executive Committee that considerable savings might be effected without giving up the present services and that a budget of expense could be established which would not exceed the anticipated income. President Willson said he could assure the members that this would be done.

His object in giving the foregoing plain statement of facts was, he said, to induce the members to view with tolerance the present financial state of the association. He hoped that due consideration would be given to the financial condition existing at the time of reorganization three years ago, as well as the continuing depression of business and the untiring efforts made to correct conditions by those upon whom responsibilities rested.

President Willson was confident that the organization could be made to function more effectively, and as a step in this direction, he said that efforts would be made during the coming year to bring into affiliation with the association some important branches of the industry that were not now represented in its activities or who had not availed themselves of the association's services. The moral and financial support of members was necessary to bring this about. He made mention of the foundation of the Institute of Paper Chemistry, "an institution which the industry has badly needed, and which gave promise of much benefit." He bespoke the endorsement and support of the industry for the Institute of Paper Chemistry.

The failure of the association to provide a general exhibit for the Century of Progress Exposition to be held in Chicago next year came in for comment. He said that efforts were made to enlist interest in a paper exhibit, but as only one or two manufacturers showed any concern, and the association was without funds, it was necessary to advise the Paper Committee of the exposition that no general exhibit would be made. The decision was a matter of regret to him for he believed that the development of the art of papermaking from early days which it was proposed to exhibit would be of great interest, especially in its relation to developments in the printing industry.

Foreign Competition

President Willson touched lightly on the subject of equalization of commodity value on pulps coming from countries of depreciated currency. He said:

"Your association has not taken any action in regard to the compensating charge or added duty to offset the depreciation in exchange on prices of imported goods from countries which have gone off the gold standard, because of conflicting viewpoints and interest of our members on this question. Had the present exchange conditions prevailed at the time the last tariff act was in formation, I am sure there would have been a united effort to protect our domestic commodities, and to have tariff rates based upon these conditions, and,

as it is, not only the paper industry, but industries of all kinds that are and will be affected. It is a problem that should be considered from a national industrial standpoint rather than for its effect upon any part of our own industry. The measure is protection to labor, prices and commodities, and in my opinion has merit."

The address was well received, the members applauding heartily.

Staff Activities

General Manager Jesse H. Neal then presented his report, in which he outlined some of the national movements that had engaged the attention of his office during the year. Before doing so he called attention to the staff and committee reports contained in a pamphlet which was distributed at the meeting. This, he said, gave an illuminating record of staff activities.

He called attention, in his formal report, to the agitation in some parts of the country for some system of national control of business, and instanced the bill which had been introduced in the senate for the establishment of a National Economic Council. The Chamber of Commerce of the United States had voted favorably on the plan, though under an amendment the council would consist of three to five men to be appointed by representative business interests, instead of a council of fifteen members to be appointed by the president.

Another plan which had been proposed by Mr. Swope, of the General Electric Company, would make membership in trade associations compulsory and give them authority to carry out employment stabilization plans, old-age pensions, and to control production. Mr. Neal did not discuss the relative merits of any of the remedies proposed for economic disorder, but he said it behooved every national industrial organization to investigate these movements and the forces behind them.

Mr. Neal outlined a number of major problems now confronting the pulp and paper industry and pointed to some of the functions of the association in handling difficulties. The factual data at the command of the association had been put to good use during 1930 and to some extent in 1931 when a number of unwise and unnecessary projects for building new mills had been brought to the attention of the office staff and abandoned because of the information they were able to give concerning the economic situation as regards production and consumption.

Statistical Department

John A. C. Kavanagh reported as director of the Statistical Department. The process of liquidation which the industry has undergone during the past year or two had taught the necessity for wider and cheaper distribution, production technic having progressed at too rapid a rate. It was found necessary to bring marketing methods to a point that would be less costly to the industry and more effective in allocating mass production to the proper consuming center. The Statistical Department had adapted its work to changing conditions and expanded its service to the industry. Details of the routine work of the department were given.

Cost Department

The report of this department was given by Director Burke who had been active in visiting member mills during the year.

Engineering Department

C. M. Baker, director, reported for the Engineering Department, giving particulars of slime control research. The use of chlorine had been relatively effective, but on account of the rapid dissipation of the chemical in its combination with organic matter its efficiency had been reduced and the application of a method of sterilizing water supplies by an ammonia-chlorine treatment had received attention. Tests conducted in two mills showed the ammonia-chlorine treatment had improved conditions. There was less tendency to corrosion of machinery and piping with this method and fewer complaints had been heard regarding interferences with the color of stock. *Slime Control*, a special bulletin published by the association, discusses this work in detail.

Pulpwood Department

Charles W. Boyce, secretary, gave particulars of the work of this department in a comprehensive report. The first extensive survey of wood pulp production and export in all producing countries had been published in the bulletin of the department. This survey revealed the character and extent of the competition that domestic producers had to face in the national markets. It showed a serious condition of excess capacity in world industry caused by the overstimulating effect of rapidly rising American pulp consumption. There was an urgent need for periodical world surveys of pulp production, exports and stocks by countries to enable producers to guide their production schedules and maintain price stability. The association has undertaken a monthly survey service of this kind.

One of the problems of the industry lay in the competition of foreign producers since the depreciation of currency in many exporting countries. The shift in pulpwood prices is having an effect on forest values, which have declined in the older pulpwood regions. Mr. Boyce said that while this meant an immediate heavy loss it tended to bring about an adjustment of pulpwood use to supply which would eventually assist the older regions in maintaining their positions in the national competition.

Reports were also presented from the Glassine Division and the Joint Committee on Approved Pulp Testing Chemists, as well as from the Central Research Committee and the Committee on Simplification and Standardization.

Standardization

Robert C. Fay, chairman of the Committee on Simplification and Standardization, reported orally on the work of his committee. The committee recommended that all mill sample books should not be smaller than 5½x8½, for the small size, and not larger than 6¼x9¼, and the large size not smaller than 8½x11, nor larger than 9x12. The use of sample cabinets was condemned as useless, these being usually emptied of samples by printers and used for the storage of plates, paper and junk of all kinds. The economy and efficiency to be gained by the use of standardized sample books by mills and merchants could not be questioned. Mr. Fay said it would mean a saving to mills and merchants of something like $4,000,000.

Resolutions Adopted

Prior to the passage of resolutions proposed by the National Paper Council, an amendment to the constitution was adopted, reading as follows:

"It shall be the duty of the Nominating Committee of the National Paper Council to place in nomination at the annual meeting at which an election is to be held, the names agreed upon by the National Paper Council for all elected officers. Other nominations may be made from the floor by any member when properly seconded."

The resolutions regularly introduced numbered six, beginning with an expression of sorrow over the loss of members who had died during the year. The names of deceased members are subjoined:

Frederick H. Babbitt, president, Babbitt-Kelley Company; Edward P. Bagg, president, Millers Falls Paper Company and Parsons Paper Company; Joseph A. Bicking, president and general manager, S. Austin Bicking Paper Mfg. Co.; Arthur T. Brown, manager, Nicolet Paper Company; Louis M. Brown, secretary, Finch, Pruyn & Co.; W. F. Brunner, president, Paterson Parchment Paper Company; Clarence W. Cabble, vice president, Dexter Sulphite & Paper Company; James L. Coker, president Carolina Fibre Company; Harry H. Cook, president, Alexandria Paper Company; Alvah Crocker, Crocker-Burbank & Co.; A. D. Daniels, president, Daniels Mfg. Co. and vice president Rhinelander Paper Company; Philip T. Dodge, formerly president of International Paper Company; W. H. Eaton, vice president and treasurer, Eaton, Dikeman Company; Elmer Garrett, president, Garrett Paper Corporation; W. T. Hawley, formerly of Hawley Pulp and Paper Company; E. A. Hotchkiss, secretary, Joseph Parker & Son Co.; F. L. Kent, secretary and general manager, J. & J. Rogers Company; George W. Knowlton, president, Knowlton Bros.; John F. Kuster, treasurer, Andrews Paper Company; A. J. Lewthwaite, formerly vice president, Crown-Willamete Paper Company; George Little, president, Franklin Board & Paper Company; Charles McKernon, formerly president, B. D. Rising Paper Company; Judge Charles F. Moore, formerly secretary, American Paper and Pulp Association; Raymond J. Parham, sales manager, St. Regis Paper Company; Waldo E. Pratt, chair-

man of board, Hollingsworth and Whitney Company; J. W. Quimby, manager New York office, Allied Paper Mills; John D. Rieg, president, Erving Paper Mills; Thomas J. Rogan, vice president, Fitchburg Paper Company; W. N. Smith, president and treasurer, Bogota Paper & Board Co.; Peter G. Thomson, president, Champion Coated Paper Company; I. O. VanDuzer, general manager, Louis DeJonge & Co.; George R. Wallace, president and treasurer, Fitchburg Paper Company; Thomas E. Warren, general manager, Ticonderoga Pulp & Paper Company; H. M. Wheelwright, Geo. W. Wheelwright Paper Company.

This memorial resolution was adopted by a standing vote.

The next resolution petitioned Congress to restore an appropriation for the support of the Paper Division of the Forest Products Laboratory, which had been eliminated or reduced.

Resolution 3 urged the continuance of the Timber Conservation Board in order that essential and accurate data may be made available regarding forest resources of the country.

Resolution 4 was not adopted without debate, George W. Sisson, Jr., introducing one of his own to take its place. The original resolution which was finally adopted called upon the officers of the association to use their best efforts and facilities to bring together other groups of the paper industry, such as book paper manufacturers and pulp manufacturers in order to harmonize any existing differences, in order that their individual interests and the interest of the association and industry be enhanced.

In advocating the substitution of his resolution, Mr. Sisson pictured the distress of unemployed workers in the town of Pottsdam, N. Y., where his mill is situated, but when the vote was taken only one hand besides that of Mr. Sisson was raised and the original resolution prevailed.

Resolution 5 expressed disapproval of a bill in Congress, H. R. 8909, to compel contractors on government works to give preference to materials of local origin and limiting purchases by government departments to materials of domestic origin.

The last resolution expressed the appreciation of the association to the officers, members of the Executive Committee and association committees generally for their personal efforts and assistance and concluded with an acknowledgment of the loyalty and good work of the association staff.

President Willson announced the presence in the hall of George Carruthers, president of the Interlake Tissue Mills, Merritton, Ont., and a former president of the Canadian Pulp and Paper Association, with the object of inviting him to the platform, but Mr. Carruthers had left just previously. The meeting was then adjourned.

Merchants Celebrate Paper Week

Divisions of National Paper Trade Association Unite in Annual Session.

As customary, the National Paper Trade Association, with its various divisions and local associations in affiliation, held its annual meeting at the Hotel Pennsylvania concurrently with that of the paper and pulp manufacturers. The meetings began on Monday afternoon, February 15, when the executive and administration committees held sittings and special committees of the Fine and Wrapping Paper Divisions met to discuss trade conditions. Included in the activities of the National Paper Trade Association are standardization and conference committees of the manufacturers of kraft paper, bags, gummed tape, hemp and flax twines, besides numerous sub-committees and divisions and these held meetings in different rooms of the hotel headquarters.

A feature of the Wrapping Paper Division meeting was an address on the kraft paper situation, from the manufacturer's standpoint, by D. Clark Everest, vice president and general manager, Marathon Paper Mills Company. Productive capacity, both actual and potential, is ahead of consumptive demand in this industry and one remedy for the bad economic situation, indicated by Mr. Everest, was for manufacturers to produce in accordance with demand, but he did not think there would be any permanent improvement until merchants, converters, and manufacturers got together to work in a co-operative way. However, he had confidence in the situation, as many of the things which had seemed hopeless were now showing signs of improvement, and it was his belief that the consumption of kraft products this year would show a great increase over that of 1931.

Another address that attracted attention by its inspiring character was that of S. L. Willson, president of the American Paper and Pulp Association, which was delivered before the Fine Paper Division. The principal theme of his talk was the need of a scientific study of cost of operation. Merchants are aware that under present conditions operating costs are in excess of past periods. New problems now confront merchants and manufacturers growing out of new conditions, changed prices, methods of packing and mark-ups. The manufacturer is anxious that the mark-up over cost shall not be so great as to become a detriment to sales and turnover. Hence his recommendation that a scientific study should be made of the subject, and manufacturers of writing papers were, he said, ready to co-operate to the extent of absorbing their part of the cost of investigation.

Retiring President Arthur W. Blackman in his annual address made a plea for the use of standard accounting methods. He said the adoption of a universal system would add to the strength of the association and command increased respect and consideration from manufacturers.

At the general meeting, which brought the convention to a close on Wednesday, officers were elected to serve during the ensuing year as follows:

President—J. F. Miller, Chope-Stevens Paper Company, Detroit.

Vice President—In charge of Fine Paper Division—A. W. Leslie, John Leslie Paper Company, Minneapolis.

Vice President—In charge of Wrapping Paper—Sidney L. Wellhouse, National Paper Company, Atlanta, Ga.

Treasurer—Charles Addoms, Miller & Wright Paper Company, New York.

Executive Secretary—A. H. Chamberlain, 420 Lexington Avenue, New York.

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◆ Writing Paper Manufacturers Elect President Third Term

The Writing Paper Manufacturers' Association met separately in annual session at the Hotel Pennsylvania, their meeting being brought to a close on Wednesday, February 17, when officers were elected for another term. Colonel B. A. Franklin, of the Strathmore Paper Company, was honored by reelection to the office of president for the third consecutive time. New vice presidents chosen were H. R. Baldwin, Hammermill Paper Company, Erie, Pa., in charge of Sulphite Bond Division; and G. S. Morse, Valley Paper Company, Holyoke, Mass., in charge of Rag Division. Emmet H. Naylor, 95 State Street, Springfield, Mass., was re-elected secretary-treasurer, and members of the executive committee were named as follows: G. S. Morse, H. R. Baldwin, J. E. Holmes, Chemical Paper Manufacturing Company, Holyoke, Mass.; Norman Bardeen, Lee Paper Company, Vicksburg, Mich.; W. C. Wing, Fox River Paper Company, Appleton, Wis., and Stuart B. Copeland, Eastern Manufacturing Company, Orono, Maine.

◆ Sulphite Institute Formed

Manufacturers of sulphite pulp came together during the annual convention of the American Paper and Pulp Association and formed for economic purposes a new organization named the Sulphite Institute. Twenty-three mills were represented and the officers elected indicate a far-flung geographical distribution of members, for those who will have charge of its affairs include E. W. Kiefer, Port Huron Sulphite and Paper Company, Port Huron, Mich., who is chairman; John E. Alexander, Nekoosa-Edwards Paper Company, Port Edwards, Wis., vice chairman; George Stuhr, Continental Paper & Bag Corporation, 220 East 42nd Street, New York, treasurer; and an Executive Committee composed of R. A. Macdonald, Crown Willamette Paper Company, San Francisco; George W. Houk, Hawley Pulp and Paper Com-

pany, Oregon City, Ore.; Guy Waldo, Flambeau Paper Company, Park Falls, Wis.; R. A. Hayward, Kalamazoo Vegetable Parchment Company, Kalamazoo, Mich., and the officers already named. For the present, Thomas J. Burke, director of the Cost Department of the American Paper and Pulp Association, has been placed in charge of routine secretarial work.

◆ Cover Paper Manufacturers' Association

After discussing reports of officers and committees and transacting other business, the Cover Paper Manufacturers' Association on Tuesday, February 16, elected officers as follows: President, Willis H. Howes, Knowlton Brothers Company, Watertown, N. Y.; vice president, R. S. Madden, American Writing Paper Company, Inc., Holyoke, Mass.; secretary-treasurer, E. H. Naylor, Springfield, Mass. Members of the Executive Committee: Willis H. Howes, chairman; R. S. Madden, American Writing Paper Company, Holyoke, Mass., and J. B. Shepherd, Peninsular Paper Company, Ypsilanti, Mich.

◆ Tissue Paper Manufacturers Elect New Officers

Among other business transacted by the manufacturers of tissue paper at the annual meeting of their association on Thursday, February 18, was the election of a new board of officers consisting of M. L. Kinkelspiel, National Paper Products Company, Carthage, N. Y., president; L. G. Wood, Northern Paper Mills, Green Bay, Wis., vice president; Herbert Thwaite, 270 Madison Avenue, New York, secretary.

The Executive Committee is composed of A. E. Cofrin, Fort Howard Paper Company, Green Bay, Wis.; H. G. Wintgens, Hoberg Paper & Fibre Company, Green Bay, Wis., and Roger W. Bell, A. P. W. Paper Company, Albany, N. Y.

Salesmen's Association Annual Luncheon

Bishop Stewart Delivers Inspiring Address on the Conquest of Fear.

FOLLOWING a business meeting at which all of the old officers were re-elected for another year, the Salesmen's Association of the Paper Industry held its annual luncheon in the banquet hall of the Pennsylvania Hotel. The program attracted a large attendance, Bishop George Craig Stewart of the Episcopal Diocese of Chicago, who is the association's chaplain, being the principal speaker and delivering "A Message for the Times," which held the interested attention of all present from start to finish.

At the preliminary business meeting, reports of officers were presented, Douglas A. Crocker reading his report as secretary-treasurer and J. H. Coy, of the Flambeau Paper Company, Chicago, bringing in a report as chairman of the Nominating Committee providing for the re-election of the old officers, consisting of Harold R. Knott, Eastern Manufacturing Company, Chicago, Ill., president; Frank H. Purington and Creighton W. Whiting, vice presidents; Douglas A. Crocker, secretary.

President Knott was in the chair at the annual luncheon, and after welcoming the members and guests and expressing the association's appreciation to the trade press for publicity and cooperation, he introduced Bishop Stewart.

A Sermon Against Fear

The keynote of the remarkably stimulating and inspiring address of Bishop Stewart was the conquest of fear and he closed with a quotation from the poet, Robert Browning, saying, "Be that kind of man":

"One who never turned his back, but marched breast forward,
Never doubted clouds would break,
Never dreamed, though right were worsted, wrong would triumph,
Held we fall to rise, are baffled to fight better,
Sleep to wake."

With reference to the present period of business depression, he said that there had been spreading over the world a great hurricane of fear which had bewildered reason, clouded vision, paralyzed action, discouraged us in all our hopes. He supposed that nearly every person had tried to figure out the causes and the cures for the predicament in which the world finds itself. In order to lighten up the subject, as he did frequently throughout his brilliant speech, he told a story. He was liberal in stories and in quotations from the poets.

The story he told at this point had to do with a man who had a dog named August, who was always jumping at conclusions. It followed a declaration by himself that he did not believe in jumping at conclusions. This man's dog which was fond of jumping at conclusions would even spend an hour jumping after his own conclusion. One day he jumped at a mule's conclusion. The next day was September, because that was the last day of August.

After a discussion of President Nicholas Murray Butler's explanation of the present dislocation of business, which went back to the development and rise, on the one hand of militaristic nationalism and on the other, the development of the inventive genius of man and the industrial development leading to a great machine age, both of which had operated to throw the world off its balance, the bishop said he would not try to trace the developments of the present situation. He told the story of two men who once went bear hunting and came across fresh bear tracks, good big tracks. After they had studied them for awhile, one fellow said to the other, "Let's divide this thing. You go on and see where the tracks go, and I will go back and see where they came from." Bishop Stewart said he proposed rather to consider the present situation. The important and significant thing to him in the world to-day was not mechanics, industries and commerce, raw products, mills or converters. It was that most mysterious and most undefinable thing, that divine thing called human personality. Surveying the world he saw millions of people in India in the grip of a man that weighs ninety pounds—a sacrament of a personality that blocks diplomacy and baffles an empire.

He looked to Russia as it is at present, the creation of one man, Lenin, and now mastered by one man, Stalin. And so he looked at other countries and saw personalities using what he saw as a text for comment and appropriate quotation either from gifted preacher or poet.

He spoke of the lessons and the benefits to be derived from the collapse of things that has resulted in the present industrial bankruptcy. "Some things have come tumbling down that ought to have come tumbling down. The first thing I see among the ruins is that amazing and silly and foolish complacency that men had two or three years ago. Gone crazy. Loose ethics. Shallow thinking. Drifting religion. . . . People were walking around holding high 'whoopee' and 'ballyhoo,' indifferent to the solid values of life. And the thing came down, and it ought to come down. The eternal laws that govern the lives of men can never be defied any more than gravitation can be defied."

Bishop Stewart said there were three values that underlay human life: Goodness, Beauty, and Truth. What transgresses the laws of goodness is doomed and has to go, and he instanced the decline and fall of ancient empires, Babylon, Assyria and Rome. The only thing that has come down to us from Rome that counts much is not what Caesar did but what Virgil and Horace said, and nothing is heard of Troy except as Homer speaks, while Dante seems to have outlived all the kings of his time. Pontius Pilate had all the battalions. He spent a few minutes, incidentally, with One who did not have anything, except everything.

Bishop Stewart electrified his audience with an account of the scene in the House of Commons when Chancellor of the Exchequer Snowden announced that Great Britain was going off the gold standard. This was to illustrate force of character and how the great souls of the world are developed. That day when Britain stood apparently on the edge of the abyss, "a little pale man on crutches, who had battled every step of the way in his life, hobbles to his place in Parliament and makes his speech. Do you remember how he ended it? The last words of that speech rang out into the elections of England

and saved the government. The words were:

"All our past acclaims our future. Shakespeare's voice, Nelson's hand, Milton's faith, Wordsworth's trust in this our chosen and chainless land, all bear witness, come all the world against her, England still shall stand."

It is much to be regretted that space limitations bar fuller quotations from Bishop Stewart's admirable address. It was a treasury of sound philosophic thought, brimming over with encouragement for those who might be wavering and lacking faith in their fellow men. The Salesmen's Association of the Paper Industry will do well to reproduce the speech in printed form and give it as wide a circulation as is possible.

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Paper Manufacturers' Banquet

THE fifty-fifth annual dinner of the American Paper and Pulp Association took place on Thursday evening, February 18, and was well attended, considering conditions. Upwards of 500 persons were accommodated in the large ballroom of the hotel, which was brilliantly decorated for the occasion. A spirit of optimism prevailed and this was reflected in the stage settings. Back of the speakers' table was a large canvass on which was depicted a sunrise, with surrounding gloom and darkness in process of being broken up and fading out of the picture.

The menu reflected credit on the hotel chef and was much praised by an appreciative crowd. The table decorations consisted of mammoth sunflowers done in paper, and bunches of these adorned the front of the speakers' table and were massed in clusters behind it and against the emblematic setting of a sunrise, across which was a scroll reading, "The Dawn of a New Prosperity." The book of the menu was a beautiful piece of printing and binding; the frontispiece was a reproduction of one of the famous portraits of George Washington. The book was bound in a stout Premoid tan Levant paper with an embossed emblem of the association in gold on the front cover. Besides a list of the officers and committee of the association, it contained the names of every president from William Whiting (1878) to D. C. Everest (1928).

As a preliminary to the speechmaking, President Willson introduced several distinguished guests who occupied seats at the head table. Among those who acknowledged the introduction by rising and making a bow were Harold Crabtree, president of the Canadian Pulp and Paper Association; A. W. Blackman, retiring president of the National Paper Trade Association, and his successor, J. F. Miller.

President Willson on the Economic Situation

Before introducing Dr. Henry M. Wriston, who was the principal speaker,

President Willson made a somewhat lengthy address in which he discussed in philosophical terms the progress of humanity in the recent past. Notwithstanding that humanity with its science had conquered nature to some extent, it had not conquered itself, and the human race was still its own worst enemy. He spoke of the herd instinct which compelled individuals to act with the mass, often contrary to their own beliefs and conclusions. The herd instinct, made up of unbounded optimism and unfounded fear, rushed humanity either to "the zenith of hope and progress or to the nadir of despair and stagnation."

Mr. Willson is not in agreement with some American economists who have suggested that the United States should follow other countries in going off the gold standard, saying:

"England left the gold standard not because she despised gold, but because she prized it so highly that she was willing to take desperate measures to keep what she had left. That can only mean that it is the British intention to resume the gold standard as quickly as possible, which can only be after traveling a long hard costly road. Why should we take the same course with nothing to gain, meanwhile destroying the only stable world standard of value remaining and making business impossible except by barter? Only the unreasoning instinct of the herd to blindly follow can explain even the bare contemplation of such a step."

The Influence of Fear

Mr. Willson pointed to fear as the dominating instinct in life. The World War was started by fear and ended by a peace treaty inspired by fear. The present business depression was a creation of fear. It may be the worst depression in American history, but progress had been made since the days of 1893 when Federal troops were called out in 167 instances to quell riots and civil commotions, with the National Guard of many states constantly under arms.

He said he was convinced that confidence would yet displace fear through the knowledge that inflation must follow deflation and this would mean gradual increase in buying power and comsumption of goods on hand. He looked for benefits from the Reconstruction Finance Corporation and other agencies created to relieve the present economic situation, adding:

"America, unconscious of its position as the leading world power, will show the way. America fills the role of a leader and within her powerful frame is gathering the energy necessary to pull herself and others out of the slough and onto the road to progress and prosperity."

Modern College Methods

Doctor Wriston, who is president of Lawrence College in Appleton, Wis., and director of the Institute of Paper Chemistry, which is a part of the college, gave in his speech a most informing account of the great changes which had taken place in recent years in systems of teaching. The modern college does not place so much emphasis on the curriculum, but concentrates on efforts to draw out what is best in the student, and he spoke of teaching as a great spiritual enterprise. All of the presuppositions on which the ancient college was founded have been torn up and the new method of teaching is producing results never previously obtained, the college trained man today succeeding better in business than ever before. Doctor Wriston made a splendid impression on his audience and left them with a heightened appreciation of what colleges like Lawrence College are accomplishing in the education and training of their students.

Strickland Gillilan was the last speaker. He entertained the audience with a number of humorous observations and stories in which irony and satire blended with mordant wit to point some moral lessons which were more or less directly related to the foibles of certain American statesmen.

◆ Cost Association Luncheon

Jesse H. Neal, general manager of the American Paper and Pulp Association, presided at the luncheon meeting of the Cost Association on Tuesday, January 16, and introduced the speakers: Allen Abrams and J. A. C. Kavanagh. Mr. Abrams, who is technical director of the Marathon Paper Mills Company and president-elect of the Technical Association of the Pulp and Paper Industry, talked on "Rational Manufacture." He discussed the great basic developments in paper manufacture during the past twenty years and reviewed the activities of the period.

Mr. Kavanagh, who is statistician of the American Paper and Pulp Association, had "Paper Possibilities" for his topic and spoke of population changes, market characteristics and distribution systems. His review of conditions covered a period of only ten years, but he said that during that time changes had occurred which affected all industry, particularly the mass-production types of industry like paper manufacturing. Merchandizing of mass-production articles had become a serious problem and necessitated advance planning.

Mr. Kavanagh said that population was not increasing at its former rapid rate and this fact taken together with the circumstance that the proportion of older people making up the nation was increasing was a consideration of great importance; for the type of demand for almost all commodities was changing, the increasing proportion of older people influencing conservative ideas. A few years ago the sales appeal was directed to younger people as they constituted the majority.

The paper industry has been geared up to a rapidly increasing population, but the rate of growth has slowed down of late and this was a major problem. Between 1913 and 1929 the population of the world had increased about 10 per cent, while, according to an estimate of the League of Nations, the world's production of foodstuffs and raw materials had expanded 25 per cent in the same period. It was evident then that production gains were out of proportion with the growth of population. It was shown that in 1929 production was 50 to 75 per cent greater than it was in 1913. However, while our domestic population was increasing 15 per cent and general industrial production in the country was increasing 75 per cent over 1913, the paper industry had an increase of approximately 120 per cent!

Among other subjects discussed by Mr. Kavanagh were channels of distribution. The most desirable way to market a product, said he, was through a few large channels rather than through a great many small ones. While it was recognized that the merchant had a definite place in the distribution of manufactured products, each manufacturer should understand fully the relative importance of the merchant as a distributor, whether large or small. The industrial consumers of paper—converters, printers and publishers—offered a larger channel for distribution, varying, of course, with the grade of paper sold.

Summarized, Mr. Kavanagh's argument revealed three prime considerations:

1—The decreased rate of population growth necessitates changes in the point of view of the manufacturer. He will have to place more emphasis on distribution.

2—A study of the distribution system of the industrial group offers a possibility of making better customers and reducing distribution costs.

3—An analysis of the characteristics of markets will facilitate budgeting and advance planning and better control operations.

◆ Paper Mill Supply Dealers Enjoy Banquet

One of the enjoyable social events of Paper Convention Week in New York was the twenty-fourth annual banquet of the New York Association of Dealers in Paper Mills Supplies, Inc., given on the evening of February 17 in the East Ballroom of the Hotel Commodore. Upwards of 300 members and their guests, including a large number of paper mill purchasing agents and other executives, were in attendance, partook of a sumptuous seven-course dinner and for a couple of hours thereafter watched an entertaining vaudeville show on a stage especially erected at one side of the spacious banquet hall. Talented vocalists, dancers, tricksters and the proverbial girl chorus kept things humming and afforded much enjoyment.

The banquet committee having charge of the affair consisted of Walter H. Martens, of George W. Millar & Co., Inc.; Fred H. Chase, Alfred J. Moran, Charles Passannante, Joseph Carrano, Louis Leonardis, Louis Gottlieb, Lawrence W. Glove and Anthony F. Carlo. A handsome journal, containing the menu and show program, as well as advertisements of firms in the paper stock trade, served as a souvenir of the occasion.

T.A.P.P.I. Convenes in Seventeenth Annual Meeting

Activities of the Association Shown in Numerous Papers and Discussions. Changes in Constitution Adopted.

THE first sitting of the seventeenth annual meeting of the Technical Association was opened by President Maxamillian A. Krimmel at the Hotel Pennsylvania at 9:30 a. m., Tuesday, February 16, with a fair attendance of members, which was afterwards swelled by late arrivals. After a few words of greeting, the president read his prepared address, in part as follows:

President Krimmel's Address

In opening, Mr. Krimmel said it had been customary for the president to review in his annual address the activities and association developments of the year, but this he deemed unnecessary, as the activities of the association, including committee work, were now a matter of record. He spoke of the new divisional plan intended to put committees and their work on a more efficient basis, saying it had been in operation a little over a year and had already produced good results.

He noted that two local sections had come into existence during the year, making four in all, and referred to the advantages of having sections throughout the country, one of which was that problems in connection with fall meetings could be attended to by them. The Kalamazoo Valley Section was in this way the host at last year's fall meeting.

Mention was made by Mr. Krimmel of the formation of a sub-committee of the Fibrous Raw Materials Committee for the preparation of specifications of qualities and properties of pulp. He said that the development of standard methods of testing and of specifications was a logical activity of the association.

He called attention to the Century of Progress Exposition to be held at Chicago next year where there would be an exhibit of pulp and paper provided by a special committee of the association, of which Allen Abrams was chairman. This exhibit is to depict general as well as technical progress in the pulp and paper industry. He remarked that an exhibit of this kind should have been sponsored by the American Paper and Pulp Association.

The development of research received attention in the president's address. He said he was gratified to note that, despite existing industrial depression, most firms had increased rather than lessened their research facilities in the confidence that research was an investment to safeguard the future.

Financial as well as moral support had been given by the association to the Institute of Paper Chemistry, while a research fellowship had been sponsored at the Forest Products Laboratory. A report from the holder of the fellowship would be presented at this meeting. Mr. Krimmel expressed his belief that research work of this type was of sufficient value to the industry to justify an increased grant of funds.

It was gratifying to note that the association had succeeded in weathering adverse conditions. It was true there had been resignations, but new members had been admitted in sufficient number to counterbalance the loss and even show a slight increase. The association was in a sound financial condition, which, he said, reflected credit upon all who had participated in its activities.

The address took the usual course, being referred for publication.

Year's Work Reviewed by Secretary

Ronald G. Macdonald, secretary-treasurer, reported on the membership and general activities of the association during the past year. In 1931 there had been elected 146 new members and 116 resigned or were dropped, showing a net increase of membership for the year of thirty. On December 31, 1931, the association had 751 active, 315 associate and 130 junior members. Three corporate members and nine contributing members had been added during the year, so that the corporate membership on December 31, 1931, totaled eighty-five and the contributing membership forty-eight.

Losses by death during the year, as reported, numbered fifteen, the following having passed on: Thomas H. Savery, Jr., E. Parke Cameron, Orville F. Bryant, Carlo Moriondi, L. E. Jonte, J. A. Hedgcock, G. E. Norton, A. F. McCoy, A. E. Sjoman, Ivan Rehn, W. B. Lewis, E. J. Owens, R. M. DeCew, S. C. Zabriskie and T. A. Cape.

The rest of the report dealt with details of office activities and the work of the four sections of the association: Kalamazoo Valley, Delaware Valley, Pacific and Lake States.

The work of divisions and committees received mention. It was noted that an improvement in committee work might be expected when the committee personnel became more stabilized.

In closing, Secretary Macdonald expressed particular appreciation for cooperative work by B. W. Scribner, C. E. Curran, Roger C. Griffin, D. E. Cable, W. G. MacNaughton, C. M. Baker and Fred C. Clark.

Satisfactory Sales of Textbooks

Royal S. Kellogg was called upon for a report of the Joint Vocational Educational Committee and he gave details of income and expenditures which showed a healthy condition of the finances of the committee. During the past year, 776 copies of the textbooks had been sold, Vol. III being in most demand, with sales of 212 copies; Vol. V was next with 201, Vol. IV with 195 and Vols. I and II with 89 and 79, respectively. The total sales of all volumes to date amounted to 23,343, Vol. III leading with 6,351 copies.

Early Volumes No Longer Needed—The committee asked instructions concerning Vols. I and II which had not been revised to date. It was suggested that these volumes might be allowed to fade out of the picture as they treated of elementary mathematics and physics with which the newer recruits to the industry were familiar and the need for them has passed. Discussion was invited on this without response and the committee was left to use their own discretion in the matter.

Changes in Articles of Organization

Some changes in the association's articles of organization which had been read and approved at a previous meeting were brought up for adoption. There was no discussion of the changes, except for an alteration in Article VI where it is provided that the annual meeting shall be held at a time and place named by the Executive Committee, instead of at the time and place of the annual meeting of the A. P. & P. A.

An inquiry by a member brought the information that the change consisted in making it optional instead of mandatory that meetings be held with the A. P. & P. A. The revised articles were put to a vote and adopted.

New Officers of the Association

A Nominating Committee was then appointed, consisting of George E. Williamson, chairman; Philip H. Glatfelter and Roger C. Griffin, with instructions to report at a subsequent sitting.

The officers named by this committee to serve during the ensuing year, as elected later, consist of the following:

President—Allen Abrams, technical director, Marathon Paper Mills Company, Rothschild, Wis.; *vice president*—Clark C. Heritage, manager, Maine

Coated Paper Division, Oxford Paper Company, Rumford, Maine.

Two members of the Executive Committee were retired: R. Bell Irving and J. S. Bates. The Executive Committee has been increased to twelve members under the new articles of organization, the complete roster now being as follows:

Allen Abrams, chairman; Clark C. Heritage (ex-officio); Maxamillian A. Krimmel, Hammermill Paper Co., Erie, Pa. (Term expires February, 1933); Geo. S. Holmes, Brown Paper Mill Co., Inc., Monroe, La. (Term expires February, 1934); W. S. Kidd, E. B. Eddy Company, Hull, P. Q. (Term expires February, 1935); Benjamin T. Larrabee, Weyerhauser Timber Company, Longview, Wash. (Term expires February, 1935); Ralph A. Hayward, Kalamazoo Vegetable Parchment Co., Parchment, Mich. (Term expires February, 1935); W. O. Johnson, Strathmore Paper Company, Woronoc, Mass. (Term expires February, 1933); Joseph H. Slater, Escanaba Paper Company, Escanaba, Mich. (Term expires, February, 1933); Grellet N. Collins, International Paper Company, New York. (Term expires February, 1934); J. F. Rhoades, Mead Corporation, Chillicothe, Ohio. (Term expires February, 1934; R. G. Macdonald (ex-officio).

New Observations on Fibers

The reading of papers was then taken up and the first announced was that by Ben. W. Rolland and Harry F. Lewis on "Optical Instruments Used in the Paper Industry." While waiting for the authors to make their appearance, R. H. Doughty was called upon to present a paper from the Research and Development Division on "The Effect of Fiber Length on Sheet Properties." A comparison of two unbeaten pulps of spruce and black gum showed that the sheets differed little in tensile strength at constant solid fraction; however, with sheets formed under a given pressure, those prepared from the short-fibered fraction shrank on drying to a higher solid fraction and were consequently the stronger. With increasing fiber length the sheet was stronger. Fiber size is important in manufacturing operations.

Some new criteria of greaseproofness were brought out in the course of the work. Thus sheets of short fiber spruce pulp, wet pressed at 500 lb. per square inch became greaseproof, as proved by the customary flame test. This appeared to be the first time a greaseproof sheet had been made by the application of pressure to an unbeaten or a partly beaten pulp.

Use of Optical Instruments in Paper Work

The paper by Rolland and Lewis was presented by Dr. Otto Kress in the absence of the authors. Among the instruments reported on were the spectrophotometer, an instrument designed to analyze color; the hydrogen-ion colorimeter, which affords an exact method for colorimetric pH work; the nephelometer, which, as its name indicates, is an instrument for studying the turbidity of colloidal suspensions and finds use in estimating the dispersity of sizing ingredients; the polarizing microscope for studying the double refraction exhibited by some papermaking materials, including cellulose, sizing and filling ingredients; the microprojector for the study of papermaking fibers by high magnification; refractometers, the saccharimeter, and photomicrographic equipment.

Doctor Kress said that the development of optical instruments was being studied at the Institute of Paper Chemistry. A needed instrument was an improvement on the Ingersoll glarimeter.

New Uses for Electronic Tubes

The last paper presented at the opening sitting was one dealing with the use of electronic tubes in the paper industry, by C. P. Bernhardt, an engineer connected with the Westinghouse Electric & Manufacturing Company, New York. He made a very interesting demonstration of the subject by means of lantern slides. He gave a list of possible uses of electronic tubes, instancing the control of paper machine speed, stock consistency changes on the way to the machine, and called attention to the remarkable versatility of these types of electronic tubes, one of which is more popularly known as the "electric eye," their field of application being practically unlimited.

Afternoon Sittings, Tuesday

At the afternoon session on Tuesday, divisional meetings were held in different parts of the hotel. The Materials of Construction Committee of the Engineering Division met for the discussion of papers dealing with alloy steels.

Chrome-Nickel Alloys

Andreas Christensen, sulphite superintendent, Rhinelander Paper Company, presented a most interesting discussion of the use of chrome-nickel fittings in the sulphite mill. During the past eight years, ten sulphite mills have gone out of existence in northern Michigan and Wisconsin on account of inability to meet competition from foreign manufacturers whose product is admitted to the United States free of duty. For paper mills that continue to make their own pulp, the only alternative to going out of business was to improve their equipment and reduce operating costs. The sulphite mill that makes pulp for the market must either write off the entire investment or better the product and reduce its cost of operation. Mr. Christensen suggested means of making improvements in the digester department through the use of chrome-nickel alloys. An alloy containing 18 to 20 per cent of chromium, 7 to 10 per cent nickel, with small quantities of manganese, silicon and carbon has found widest application. Calcium bisulphite liquor does not affect it. Perforated chrome-nickel drainer bottoms in blowpits has stopped fiber losses. After four years' use, on digester relief lines, chrome-nickel fittings were as good as new. The investment is a profitable one even at prices paid four years ago. He is convinced that radical changes will be brought about in the sulphite industry by the more general introduction of chrome-nickel alloys.

Alloy Cast Iron in the Acid Plant and Paper Mill

Another contribution to the use of nickel-chrome-iron alloys as preventives of corrosion was made by J. S. Vanick and F. L. LaQue, of the International Nickel Company. In the case of sulphite digesters such alloys possess fair resistance to corrosion as compared with bronze. An alloy of nickel and iron increases resistance to corrosion in the sulphate and soda processes and corrosion is prevented where used in pumps for paper stock and white water. The same holds good as regards alloy compositions in the equipment of bleach plants, as well as for paper machine parts. Reference was made to the use of alloy additions to calender rolls, gears, sprockets, clutch plates and other miscellaneous castings. These were open to improvement in corrosion resistance, wear resistance, stiffness, strength and hardness.

Metal Alloys Resistant to Alkaline Liquors

The resistance to corrosive action of various alkaline liquors on high chrome and chrome nickel alloys set forth in this paper by G. H. McGregor, instructor in pulp and paper technology, Institute of Paper Chemistry, Appleton, Wis., constituted a record of observations of the action of the alloys when subjected to mill service at the Northwest Paper Company, Cloquet, Minn. As a comparison of the resistance of cast iron and steel, brasses and bronzes, with chrome nickel alloys, the date assembled should be of suggestive value.

Work on Materials of Construction

J. D. Miller, chairman of the Committee on Materials of Construction, reported briefly on the work of metal sample testing in a sulphite corrosion chamber. Supplementary work will include a report on the effect of heat treating before and after machining. The metallurgical features of the work have been carried out by F. L. LaQue of the committee.

The Testing Division held forth in Parlor I when papers were presented by the Paper Testing Committee E. W. Scribner, chairman. A paper on "Hygrometry in Paper Testing" was presented, with illustrations, by F. T. Carson.

Humidity Measurement in Paper Testing

The paper by F. T. Carson and F. V. Worthington, of the Paper Section, U. S. Bureau of Standards, recorded the results of a series of investigations to determine the humidity requirements in paper testing. Extensive references to the literature of the subject were included, the bibliography alone numbering sixty-three titles from a wide range

of sources. This in itself constituted a useful feature of the paper. Hygrometric methods are fully discussed. It is noted that the dew-point method has several practical limitations. Filament hygrometers, though unreliable as standards afford a simple means of indicating and recording fluctuations in hygrometric conditions. Properly designed wet and dry bulb thermometers are apparently best for measuring moisture conditions in the laboratory, but psychrometric conversion data are an essential part of this method and charts are available for converting the data to terms of relative humidity.

This was followed by other contributions relating to the testing of papers and fibers.

Detecting Unbleached Fiber

E. Sutermeister contributed a note on his method for determining unbleached fiber in paper (sulphite fiber being meant) by means of Millon's reagent. The method is described in the author's book on *Chemistry of Pulp and Paper Making*. The suspected sample is moistened with the reagent and held for a second or two in the steam of a steam bath. Warming carefully over a flame or over a radiator will also serve the purpose, but if heating in any of these ways is too long or too severe the proper effect is not obtained. Under proper conditions, the unbleached fibers appear as brownish hairs in the white paper and the number of such hairs is an indication of the amount of unbleached fiber present.

Extraction of Rosin from Paper

The standard method for the determination of rosin in paper provides for the use of 95 per cent alcohol containing half of one per cent glacial acetic acid and 9.5 per cent water, it being understood that 95 per cent alcohol represents 90 per cent by volume and the acid and water are measured by volume. E. Sutermeister and W. V. Torrey, of S. D. Warren Company, have checked up on the method and reached the conclusion that a stronger acid than acetic is needed to get best results in breaking up the alum-rosin complex, and they recommend the substitution of 5 cc. of concentrated sulphuric acid to 200 cc. of 95 per cent alcohol. The sample should be soaked for several hours in the solvent before starting the extraction.

Influence of Air in Heat Test of Paper

A study of the influence of fresh air in the accelerated aging test for paper by P. F. Wehmer, of the Electrical Testing Laboratories, New York, showed that variations in the intake of fresh air and contacting with the paper were without significant effect upon result. The accelerated aging test consists in exposing the paper under examination to a temperature of 105 deg. Cent. for seventy-two hours.

Calibrating Tearing Testers

James d'A. Clark described a method for calibrating tearing testers, with special reference to the Thwing and Marx-Elmendorf instruments. A comparison was made of the results obtained with each tester and the differences in results were brought out and discussed. It was noted that the Marx tearing tester is not calibrated so as to give grams force to tear a single sheet when six double tears are made as recommended by the makers. Mr. Clark said that six single tears should be made to obtain a direct reading.

Testing Water Resistance of Papers

In a paper by Philip W. Codwise, of the Certain-teed Products Corporation, a report of work was given on the overall "size resistance" of paper. The Paper Testing Committee has been at work to develop a standard method for the testing of water resistance of paper. The dry indicator method is said to be the most suitable for the purpose and recent committee work has been concentrated upon refinement of the details of this method. An abridged form of the method was given. The indicator is prepared by pulverizing tablet sugar until it passes a 100-mesh sieve. Soluble starch and methyl violet dye are prepared similarly. A mixture containing 45 grams sugar, 5 grams starch and 1 gram methyl violet is then prepared. The indicator is sprinkled on the top of a test specimen of paper measuring 2¾ inches by 2¾ inches. The specimen is then exposed to the action of water at exactly 70 deg. Fahr. upon its under side and the elapsed time in seconds for the indicator to discolor the upper side of the specimen is determined. Two readings are taken, one when 25 per cent of the area has discolored and one when 75 per cent has changed, an average of the two readings being taken as the reported result. A large series of tests are included, sufficient to justify the committee in recommending the dry indicator test as a standard method for determining water resistance of papers.

Ink Resistance of Printing Papers

B. L. Wehmhoff, chairman of the subcommittee on Ink Resistance of Printing Papers, reported comprehensively on the work of his committee. A complete report of the work is contained in Technical Bulletin 13 of the Government Printing Office, copies of which can be obtained upon request to the Government Printing Office.

Ink Absorption of Newsprint

The conclusions based on a study of eight special samples of newsprint, as regards ink absorption, were stated as follows:

1. The higher the percentage of ground wood, the more rapidly the ink is absorbed by the paper.

2. Newsprint containing bleached sulphite absorbs ink more readily and more evenly than does newsprint containing an equal percentage of unbleached sulphite.

3. With increasing percentages of sulphite pulp, there are an increasing number of fibers which are not coated with pigment particles.

4. The penetration, as observed from the opposite side of the sheet two days after the draw outs were made, is least in the paper made from 100 per cent ground wood, and increases with the per cent of sulphite. In each case the papers made with unbleached sulphite show more penetration than corresponding papers containing the same percentages of bleached sulphite.

Properties of Newsprint as Affected by Furnish

The physical properties of newsprint as affected by character of furnish was stated as follows:

1. Increase in the percentage of sulphite pulp increases the tensile and bursting strength of newsprint, but bleached sulphite does not increase the strength to the same extent as unbleached sulphite pulp.

2. Increase in the percentage of sulphite pulp apparently increases the basis weight for a given thickness.

3. Increase in the percentage of sulphite pulp decreases the ash content of the paper, although the ash content is higher when bleached pulp is used than is the case if unbleached pulp is used.

4. The opacity of paper decreases as the percentage of sulphite pulp increases. Ground wood pulp is most opaque, unbleached sulphite next, and bleached sulphite most transparent.

5. The gloss of the paper increases slightly with the increase in percentage of sulphite pulp. Bleached sulphite yields a lower gloss than corresponding amounts of unbleached sulphite pulp.

White Water Utilization and Slime Control

At a meeting of the Management Division, papers were presented on white water utilization and foam control, the general subject of slime prevention also receiving attention.

Chlorine to Prevent Shrinkage Losses

Herman W. Richter, of George O. Jenkins Company, cited the use of chlorine in leather board manufacture as a means of preventing shrinkage of product due to soluble losses. He made a graphic demonstration of losses observed before and after the application of chlorine, both in white water and in intake water. In summarizing results, he stated that controlled chlorination of intake water provided a partial answer to the shrinkage problem in a leather board mill and had led to important economies in slime reduction and increased machine production.

Wednesday's Meetings

There were meetings of the Operating Division, Engineering Division and Testing Division, beginning at 9:30 A. M. Wednesday, February 17.

The Alkaline Pulping Committee met under the chairmanship of E. S. Hinman to discuss an interesting historical review by C. L. Wagner, engineer, J. O. Ross Engineering Corporation, which dealt with the development of chemical pulping and the recovery of heat and chemicals.

Papermaking Through the Ages

Mr. Wagner discussed ancient, medieval and modern methods of pulp and paper manufacture, completing his study with an historical review of progress as reflected by patent literature, his references being confined to patents issued by the United States Patent Office.

Following a reference to the ancient use of papyrus in Egypt, it was noted that in China, before the Christian era, true paper, as distinguished from papyrus, was made both by mechanical and chemical processes. To the Chinese belonged the credit of originating these processes.

In the medieval period, dating roughly from 1000 A. D. to 1800 A. D., fibers from rags, jute, esparto and other grasses were used in the manufacture of paper, Shaeffer, of Regensburg, having published a book in 1765 printed on sixty varieties of paper made from as many different materials. The first mill in America, that of William Rittenhouse at Germantown, at about 1690 used rags.

Modern developments may be said to begin with LeBlanc's invention of soda ash manufacture, though the use of wood was first suggested by Reaumur in 1719. The soda process, which dates from the invention of soda ash, is the oldest chemical process. It is not definitely known when the recovery of soda began, though there was a considerable activity in the early 1800 period.

The use of the rotary furnace was developed generally after Dahl's discovery of the kraft process. Heat recovery methods date from 1912, though the Swedish patents of Sundblad are the first disclosures of heat recovery by means of boilers in the Swedish patent office.

The first sulphate pulping plant was established in North America at East Angus, Canada, by Brompton Pulp and Paper Company, in 1907-1908, with multiple evaporators, rotaries and smelters. The rotary furnace was very generally adopted in the United States about 1880 when soda pulp mills were operated in New England States.

An abstract was given of the Wagner furnace, the author's own invention, which resulted from his efforts in 1923 to improve rotary work by securing complete combustion and the elimination of extra fuel. By means of this furnace, liquors from the soda and sulphate processes are handled equally well, only a slight change in operation and construction being required. The chemical is smelted, practically free from carbon.

The Goodell recovery system, of which only one installation exists, was referred to as a very interesting development. It is a method of spray drying the black liquor and smelting the powder. The heat economy appears good, equal apparently, Mr. Wagner said, to the best spray type furnace. In common with the Wagner furnace, the Goodell method yields a higher sulphide from equal amounts of saltcake than is possible with the Swedish unit.

The Swedish type of recovery system referred to in the preceding paragraph follows the lines of Swedish practice in having a boiler after the rotary.

A tabulation of results from the various types of recovery systems, based on 100 tons as a unit concluded the paper. The figures are given below:

	Fuel	Labor	Steam to Evaporate Liquor	Upkeep	Stack Loss, Per cent	Steam Produced
Soda Rotary	10	20	30	25	3	25
Kraft Rotary	2—4	50	28	60	6—8	.....
Swedish Practice	.....	50	30—32	65	2—3	55—65
U. S. Swedish	.....	40	28	45—50	6—8	50—55
Wagner Type	.....	10	35	15—40	2—3	100
Goodell Type	.....	15	32	Not known	4—5*	100

*From present information.

Deinking Book Paper

In this contribution to the Alkaline Pulping Committee, H. A. Morrison, engineer, Oliver United Filters Company, Chicago, gave an account of the equipment and methods used in the remanufacture of paper from recovered book and magazine pulp, the processes being indicated clearly by means of flow sheets. The performances of Oliver filters and screens were described in detail.

Acid Pulping

The Committee on Acid Pulping convened a meeting of those interested in that subject following the adjournment of the Alkaline Pulping Committee.

High Free Sulphur in Cooking

Under the title "Effect of Relatively High Sulphur Dioxide Concentration in Sulphite Pulping," G. H. Chidester and J. N. McGovern, of the Forest Products Laboratory, discussed the effect of a high free sulphur dioxide concentration in sulphite pulp cooking. In the experiments reported, the total sulphur dioxide in the cooking acid varied from 5.5 to 20 per cent. The average percentage of "free" sulphur dioxide in commercial practice is low, the limit being usually 6 and 7 per cent total sulphur dioxide. The tendency in recent years is in the direction of higher concentration, as was brought out in an article by Prof. Eric Haegglund in THE PAPER INDUSTRY of July, 1931. The speed of cooking is increased by concentration of excess sulphur dioxide in the acid. The effect of increased digester pressure, of 85 lb. per square inch, was to decrease the yield as well as the bleach requirement as compared with acid containing 10 per cent sulphur dioxide under 75-lb. pressure, the results of a large number of digestions with varying amounts of sulphur dioxide, temperatures and pressure being given. The conclusions of the authors are that with increase in initial sulphur dioxide content there is a distinct increase in pulping action, though the difference is relatively small.

Test on Russian and Canadian Spruce

A somewhat interesting paper on the comparative value of Russian and Canadian spruce as raw material for sulphite pulp was presented by W. H. Monsson and G. H. Chidester as a result of work done at the Forest Products Laboratory, Madison, Wis. The tests revealed no significant difference in the quality of the pulp produced from the respective woods. Nor was any difference indicated in the yield of pulp produced when calculated on the basis of the weight of the wood used. When calculated on a volume basis, however, the yield of pulp varied with the density of the wood, which was considerably lower in one of the lots of Canadian spruce. The tests were made on two lots of spruce from Canada and one lot from Russia. The wood from Russia was thought to be Norway spruce (*Picea excelsa*), but a positive identification could not be made on account of the absence of bark. Complete details of the chemical tests, experimental digestion, and mechanical tests of resulting paper were given.

New Type Sulphur Burner

Considerable interest was taken in the description of a new sulphur burner developed in the Research Department of the Texas Gulf Sulphur Company. The paper was presented by Raymond F. Bacon. Claims made for this burner included the production of a gas strength of 19 to 20 per cent sulphur dioxide, without formation of sulphur trioxide. The delivery of gas to towers under pressure, thus eliminating fans, and the conversion of sulphur to sulphur dioxide with 99 to 100 per cent efficiency. The cost of the installation was put at $3,500 and the cost of operation at $2.50 per twenty-four hours, there being no labor cost, except that for keeping the melting tank provided with sulphur.

A New Vertical Beater

As a contribution from the Stuff Preparation Committee, a paper was presented by C. W. Morden, of Morden Machines Company, Portland, Ore., descriptive of the Morden Stock-Maker, a new vertical type beater which is used for continuous batch beating. The stock treating elements of this machine consist of a conical shape rotor somewhat similar to a jordan plug, and a bedplate shell surrounding it. The bedplate shell is capable of being moved up and down to vary the degree of beating given the stock. Outside of this bedplate shell is another conical-shape shell, separated from it by a space which forms a passageway through which the stock is recirculated as it is being treated. Illustrations of the machine and of fibers before and after treatment by it were shown.

The Heat and Power Committee of the Engineering Division met simultaneously with the other divisions but in

another part of the hotel. Walter N. Polakov was down on the program for the discussion of mill power plant equipment and there was a good attendance of members. He showed by charts and graphs the means of efficient steam generation, giving an exhaustive review of conditions in the industry pertaining to fuel consumption and the integration of power in an industrial plant, which, however, does not lend itself well to summarization.

The Cinder and Fly Ash Nuisance

An interesting account of the cause of solids in boiler flue gas was contributed by the Committee on Heat and Power in a paper by J. C. Hardigg, a New York engineer. With a consumption estimated at 500,000,000 tons of bituminous coal in the course of a year, 20 per cent of this, or 10,000,000 tons is reckoned as ash. The range in the amount of the solids thrown out of a stack is from 1½ to 8 per cent of the coal burned. The economic loss or damage due to ash in bituminous coal is difficult to estimate. The pulp, paper and printing industries burn about 10,000,000 tons of this coal annually and this amount of fuel is equivalent, the author said, to a production of at least 10,000,000 tons of paper and board. Ten million tons at $50 a ton, as an average assumed price, is $500,000,000. The damage from ash, when reckoned at the low value of 2 per cent, amounts to $10,000,000 a year. The damage depends upon where the ash settles. A plant located in a thickly populated district may cause damage to the products of others and have its products damaged by the ash of others, whereas the isolated plant may damage only its own production.

The source of the cinder nuisance may be faulty construction of the building —or with equipment, flues being sometimes angled or bent to form obstructions to the free flow of gas and thus become pockets for cinder deposits. Uses for the ash caught in the form of fine particles have been found in the asphalt and rubber industries.

Insulation for Electrical Equipment

E. C. Dieffenbach, a representative of the General Electric Company, submitted a paper on insulation materials in general use for electrical equipment, in which methods of insulation were also described.

Power Factor Computations

In a paper submitted by R. H. Rogers, of the General Electric Company, a scientific explanation was given of the causes of reduced production through lagging power factor. Mathematical demonstrations were given in the discussion of problems relating to power factors.

Steam Savings for Forced Circulation Evaporation

Some of the steam savings effected by the application of forced circulation to the evaporation of black liquor were discussed in a paper by W. T. Hinckley, of the Swenson Evaporator Company. After describing the principles of multiple-effect evaporation and what determines the capacity of an evaporator, he spoke of sources of steam consumption in the operation through corrosion of tubes and the tendency of rosin soap compounds to precipitate out of the liquor in the evaporator. It was difficult to determine the total operating economy of an evaporator installation. Each case must be calculated separately on the basis of prevailing costs. Steam savings of a forced circulation evaporator have to be balanced against additional power requirement. The maintenance cost of a forced circulation evaporator is lower and economies result from continuity and ease of operation.

Drying M. G. Papers

Facts concerning drying rates and effects of air scavenging on the drying of machine-glazed papers formed the subject of a paper by R. S. Wertheimer, of the Longview Fibre Company. The paper machine on which the tests were made was equipped with a 12-ft. diameter cast iron dryer 188 inches total face on which a 170-inch sheet was dried. The pressure roll was kept in contact with the dryer by a nip pressure of between 175 and 225 lb. per inch of contact, direct acting hydraulic cylinders being used. Details of the technique of sampling the sheet were given. Ordinary wet and dry bulb temperature determinations were made in observing humidity conditions in the dryer hood. Some of the conclusions of the author are that air temperatures play a very minor part in accelerating evaporation. Air temperatures up to 450 deg. Fahr. were tried on various weights of paper with almost no perceptible increase in drying rates, though it was found that if the relative humidity of the vapors at the outlet of the hood rose above 40 per cent the drying rate was reduced. It was considered best to maintain this maximum relative humidity by the use of a relatively large quantity of air at moderate temperatures rather than by use of higher temperatures and smaller air volumes. Quantitative tests were made to show the effect of air scavenging on drying rates on a Yankee dryer. It was found that the drying rate was increased from 20 to 23 per cent by the use of hot air over the dryer instead of natural circulation.

Centrifugal Pump Performance

M. M. Klosson, chief engineer, Buffalo Pumps, Inc., presented a careful study of methods of pumping wood pulp and paper stock with regard to the line of pumps needed to meet various characteristics of stock or conditions of installation. Stock is pumped at higher consistencies now than formerly and the pump engineer must have a knowledge of the factors concerned in centrifugal pump performance. The installation of a properly selected pump in the first instance was a matter of great importance. Occasionally conditions are encountered where pumps of identical make, characteristics and service failed to give identical results on account of some change in the characteristics of the stock or condition of installation. Accordingly the pump engineer must be familiar with the characteristics of pulp in various stages of manufacture, as well as the purely engineering details of pump construction. Mr. Klosson gave illustrations of cases where pumps had been used for pulps of higher consistencies than they were intended to handle. After a careful study of the stock, it was a simple matter to equip the pumps with properly designed rotors. Some particularly difficult stock pumping installations were described to show the range of application that had been met successfully.

Pulp Testing Methods

The Pulp Testing Committee met again in Parlor I on Wednesday when various papers were presented, including one on the determination of alpha-cellulose, in which some changes were suggested in the tentative standard method of testing, by W. R. Willetts, of the Western Electric Company.

Roger B. Brown has added a new word to the technique of pulp testing in a measurement of the flow characteristic of pulp, which he terms "flobility." The test is performed with a liter of pulp suspension containing 1 gram of pulp, calculated on the bone-dry basis. This suspension at 70 deg. Fahr. is subjected, while being shaken gently, to a vacuum of at least 15 inches of mercury for a minute, poured gently into a liter graduated cylinder and allowed to stand 15 minutes. At the end of this time, the volume in cubic centimeters occupied by the fibers is noted, and this constitutes the numerical measure of the "flobility" of the pulp.

Another physical characteristic of pulp was described by him as "springback" and this is capable of measurement. The factors affecting flobility and springback and their influence on refining control were commented upon to show the need for more data concerning the changes in physical characteristics of pulp as it is being refined.

Speakers at the Luncheon

Following a luncheon, the afternoon was devoted to the reception of progress reports from different divisions and committees. Speakers at the luncheon were C. W. Rivise, who discussed the rights of employers and employees in inventions developed during the period of employment. He cited a large number of court decisions bearing on the ownership of patents.

C. R. Warwick, secretary of the American Society for Testing Materials, was a guest speaker. The subject of his talk was concerned with the value of standards, and he discussed the economy and advantages of specifications.

Meetings on Thursday

A series of division and committee meetings occupied the time of the members on Thursday from 9:30 a. m. to 12 noon, after which there was a general

association luncheon, which brought the annual meeting to a close. Officers for the ensuing year were elected.

The Committee on Finishing, Processing and Converting met under the chairmanship of J. J. O'Connor, when the subject of coating in its various aspects was discussed.

Strength of Paper Coatings

Differences in the strength of the coatings applied to paper are often observed, especially with papers in which the single coater has been used. Papers coated on double coaters where the two sides have been coated simultaneously exhibit satisfactory uniformity as to strength of coating. Harold R. Rafton, in a contribution of the Committee on Finishing, Processing and Converting, reaches the conclusion that the segregation of the pigment in a color film by gravity may, under certain conditions, influence the strength of the resulting coating. This segregation or deposition of color may be minimized by increasing the viscosity of the color through the use of pigments of low specific gravities and particularly of fine particle size.

Handling and Drying of Single Coated Paper

In a paper presented by H. G. Rappolt, of the J. O. Ross Engineering Corporation, a rather complete account was given of the methods ordinarily in use for the handling and drying of single coated paper, the various mechanical improvements effected during recent years being fully noted and illustrated in the text.

Machinery Developments

At a meeting of the Equipment Division, new developments in the application of equipment to the pulp and paper industry were outlined in a series of papers under the headings General Paper Machinery, Pumps and Consistency Control, Instruments and Recorders, Electrical Development. E. F. Bearce presided as chairman.

Improvements in Paper Machinery

Outstanding improvements in paper machinery formed the subject of a communication by C. R. Whipple, of the Beloit Iron Works. He mentioned a new three-point shake for the fourdrinier part and a new method of handling the breast roll when changing the wire. The development of hypoid drives for paper machine sections constituted an improvement in spiral gear drives. Mention was also made of a new type condensate remover for dryers, as well as rubber-covered suction press rolls.

L. M. Start, of Rice, Barton & Fales, Inc., sent a report on the operation of two paper machines installed by the company at the mill of the Maine Seaboard Paper Company, Bucksport, Maine.

Complete power data for the various parts of the machine were included. Mr. Start also mentioned a development in spiral gear drives by the use of a hypoid spiral gear with a pinion shaft above the center of the gear shaft, providing an economy of space and enabling the placing of a bearing on a pinion shaft at either end of the casing. Mr. Start provided an illustration of a new type of suction box oscillator in operation at the Kalamazoo Paper Company mill.

The Best Doctor Blade

Rice, Barton & Fales, Inc., have made numerous experiments toward the production of a satisfactory doctor blade and have reached the conclusion that bronze is the best metal to use. A description was given of a high-speed dandy roll in operation on a high-speed newsprint machine at the Dalhousie mill of the International Paper Company, which he said represented a progressive step in the manufacture of better newsprint. The dandy used was supplied by the Johnson Wire Works.

Merits of Vickery and Lodding Doctors

On the subject of press roll doctors, a communication was read from G. D. Bearce, manager of the Dalhousie mill of the International Paper Company, in which he compared the operation of the Vickery and Lodding doctors. Both doctors are of the thin-blade type, are self-aligning and fit snugly to the face of the roll. The Vickery doctor was easier to adjust and the blade wear is about equal. Mr. Bearce said that the Lodding doctor does not score or mark the roll and lives generally up to the claims of its manufacturer.

Langston Traveling Cut-Off

Samuel M. Langston Company, Camden, N. J., contributed information on the "Traveling Cut-Off," a continuous operating knife in which the cutting element travels with the material while cutting it, then speeds up out of the path of the advancing material, so that when the cutting elements separate, they clear the sheet and are ready for the return stroke. The knives are built to cut a minimum of 18 inches and a maximum of 72 inches, or can be built to cut a minimum of 36 inches and a maximum of 144 inches.

All the gears are chrome nickel, heat treated, or nitralloy gears; all the bearings are roller or ball bearings and everything runs in oil protected from dirt and grit.

Downingtown Extractor

The Downingtown extractor was described by C. H. R. Johnson, of the Downingtown Manufacturing Company, as a new device for removing large quantities of water from the sheet after it comes off the last cylinder mold. The device consists of a wire-faced bottom roll having a stiff cast iron core on which are mounted heavy cast bronze spiders. These spiders support brass rods, on which are wound a copper winding wire. The top roll is rubber covered on a cast iron core having steel journals. It is equipped with a slice, as a very large amount of water comes up through the pick-up felt. No suction pump is required and no single installation has been driven up to the present. Photographs were exhibited showing installations at the Penn Fibreboard and Manchester Board and Paper Company mills. Figures were given to show the nip pressure, amount of water removed and consistency and dry caliper of board on tests made at the Consolidated Paper Company Mill, Monroe, Mich.

Downingtown Board Forming Machine

The Downingtown board forming machine was the subject of a note by E. T. Street, of the Downingtown Manufacturing Company, and a photograph was exhibited showing a machine built to produce a sheet 8 feet wide up to 3 inches thick.

F. E. Bentley, of Noble & Wood Company, described a new form of consistency control mechanism, dependent on a differential gear.

A gauge for measuring paper thickness, known as the Schuster Magnetic Gauge, was reported on by G. L. Hammond, of the Black Rock Manufacturing Company, Bridgeport, Conn. This instrument measures and records the thickness of paper while in motion without tear-outs. It signals any off gauge work and mechanical adjustments may be made for controlling thickness.

New Chlorination Equipment

Wallace & Tiernan Company, Inc., reported through R. B. Martin on chlorination equipment. A combined chlorine-ammonia treatment represented a new method of preventing slime formation which offered some economy of operation. It was necessary that both the chlorine and ammonia be accurately controlled and applied in proper manner so as to produce the right combination to form the more economical chloramines. Formation of chloramines maintains the chlorine in active form and permits application of reduced quantities of chlorine with improved sterilization results.

The Liebeck Fibrator

Frederick Wierk, of Johnson & Wierk, submitted some studies by Harry Liebeck, engineer, Scott Paper Company, in the development of a fibrator which would be economical of space, defiber pulp more completely, be economical in power and suitable for either batch or continued operation and be capable of handling frozen bales. An illustration of the Liebeck fibrator accompanied the paper.

Testing the Porosity of Paper

At a meeting of the Use Requirements Committee of the Research and Development Division on Thursday, under the chairmanship of P. K. Baird, two papers were presented by the staff of the Forest Products Laboratory. One of these, entitled "The Volumetric Composition of Paper," by R. H. Doughty, C. O. Seborg and P. K. Baird described a new porosity-testing instrument of the differential pressure-drop type, with a discussion of some of the factors in its operation. The apparatus was shown to be constructed from a disused hand-operated Mullen tester connected with a vacuum pump and a balancing tank to maintain a constant pressure drop. Water man-

ometer readings are made on millimeter scales. By means of this apparatus, which is said to be an improvement on the Emanuelli method, the porosity of paper can be determined in terms of equivalent pore size or of air transmission, and it is said to combine ease and flexibility of operation with a satisfactory degree of accuracy.

Meeting Ends With a Luncheon

The meeting was brought to a close with a luncheon at which addresses were made by Frank Cushman, of the Federal Board of Vocational Education; Dr. H. P. Wriston, president of Lawrence College, Appleton, Wis., and Walter N. Polakov. Mr. Cushman gave an interesting account of a vocational education survey of the pulp and paper industry, and Doctor Wriston spoke of modern developments in college work, touching on the course of papermaking at the Institute of Paper Chemistry which is an integral part of Lawrence College. Mr. Polakov, who is well known for his engineering studies through his contributions to the periodical literature of the industry, has recently returned from Russia where he was engineering management advisor to the Supreme Economic Council of the Union of Socialist Soviet Republics. His talk, which was illustrated with lantern slides, dealt with industrial management problems in Russia and proved a most interesting delineation of Soviet accomplishments in the engineering field.

Analytical and Testing Methods for Pulp and Paper Mills*

Review of Revised Edition by Dr. Schwalbe and Dr. Sieber

By JOHN L. PARSONS

TWELVE years ago, Professor Schwalbe and Dr. Sieber published their compilation of important chemical methods of analysis relating to the pulp and paper industry in the first edition of their now familiar volume on chemical process control. Within two years the entire edition was out-of-print, which fact was rather indicative of the need felt for such a book. The second edition, with a hundred or so added pages, appeared in 1922. During the interim between the appearance of the last edition and the present one a vast amount of literature on new and improved analytical methods concerning the pulp and paper industry has accumulated. The authors have been faced with the task, therefore, of deciding just what methods and procedures should be included in the third edition. For this reason and others the appearance of the volume has been slightly delayed.

The authors point out in their preface that so much valuable material in the field of cellulose research has appeared within the past ten years that a subdivision of two chapters has been found necessary, so that the present edition comprises ten chapters in all. The pages number 547, which is more than double the size of the first edition. The text is illustrated with 71 drawings and diagrams. The literature references are found through the first half of 1931. An idea of the completeness with which the authors must have covered their subjects may be obtained from the fact that nearly 700 references to the literature are cited, of which a good proportion refer to contributions published in this country and Canada. The worth of the volume is considerably enhanced by the inclusion of so many footnotes to original sources. At the conclusion of many of the chapters additional literature references are listed which should prove useful to many readers who desire further information on certain subjects.

In the preparation of the third edition, Professor Schwalbe has written those sections dealing with the analysis of raw fibrous materials, testing of unbleached woodpulps and half stock, control of bleaching process and testing of bleached pulps. Dr. Sieber has contributed to the sections concerned with the testing of auxiliary raw material, industrial waters, etc., in connection with the operation of soda, sulphate and sulphite pulp mills, as well as paper mills. Apparently no attempt has been made to indicate what testing procedure is best; on the other hand, the authors have used excellent judgment in including practically all of the well known and usable methods because little progress has been made toward the standardization of testing methods in the pulp and paper industry. The general arrangement of the entire book is a most commendable one and reflects the care and thoroughness of the authors in its complete revision.

Chapter one is concerned with chemical control in the power house and includes methods for the evaluation of boiler feed water, industrial waters, fuels and lubricating oils.

In chapter two Schwalbe presents a system of analysis for raw fibrous materials, such as wood, straw, jute, flax, cotton linters, etc. The preparation of the material for analysis is discussed and thereafter follow methods for the determination of specific gravity, moisture, ash, extractives, and finally the chief constituents of the raw fibrous materials, namely the hemicelluloses, the cellulose, and the lignin.

Process control in soda and sulphate pulp mills is discussed in chapter three by Dr. Sieber. Methods are given for the chemical examination of the auxiliary raw material incident to the respective pulping processes and to the residual liquors resulting therefrom. Several pages are devoted to the testing of various by-products as liquid rosin, turpentine, and methanol. In the following chapter a similar treatment is given for sulphite pulp mills and the manufacture of alcohol from waste sulphite liquor.

Dr. Schwalbe describes the many methods employed in the testing of groundwood, chemical wood pulps and rag fibers in chapter five. The subjects treated include macroscopic colorimetric methods for groundwood, pulp sampling, moisture content, differentiation between the fibers of chemical wood pulps, ash in pulps, determination of the degree of cooking or digestion, lignin content, resins and fats, physical testing of pulps, etc.

Chapter six is concerned with the functions of chemical control in the bleaching process. The analysis of bleach solutions, bleachability tests for pulps, the bleaching operation, antichlors, bleach residues, the whiteness of pulps and yellowing tests are among the subjects covered.

The succeeding chapter deals quite naturally with the examination of bleached pulps. A complete analytical scheme for the evaluation of pulp quality by physical and chemical methods is given. Considerable space is allowed for the copper number determination, originated by Dr. Schwalbe over twenty years ago. The various modifications of this well-known test are listed in detail. Other analytical procedures in this chapter comprise the determination of wood gum, alpha cellulose, beta cellulose, gamma cellulose, baryta resistance and the fiber incrusting constituents — the pentosans, hexosans and lignin. Several pages are concerned with methods for ascertaining the degree of hydration or swelling of the pulp fibers, and methods are described for the evaluation of the viscosity of pulp solutions, both cuprammonium hydroxide and viscose. Unfortunately no mention is made of the simpler technic developed at the Shirley Institute by Clibbens and Geak for determining the viscosity of cellulose in a cuprammonium solution. Hess' method for determining the rotatory value of cuprammonium solutions of cellulose is also described. According to Hess this value is a criterion of cellulose purity. Dr. Schwalbe concludes this important chapter with a discussion of the methods employed in the testing of rags and includes the technic which has been developed in this country and abroad for the preparation of highly purified cotton cellulose.

Chemical control in the paper mill is the subject of chapter eight. The subjects covered by Dr. Sieber include the analysis of the various raw materials such as rosin and rosin size, gelatin and glue, casein, starch, alum, fillers, coloring materials, etc., which enter into the manufacture of paper. A brief consideration is given to the determination of

*Die chemische Betriebskontrolle in der Zellstoff und Papier Industrie (Chemical Process Control in the Pulp and Paper Industry), by Dr. Carl G. Schwalbe and Dr. Rudolf Sieber. Third, completely revised edition (1931). Published by Julius Springer, Berlin. Price, bound, RM.32—. Listed at $7.92 by G. E. Stechert, 31 East 10th Street, New York, N. Y.

the hydrogen ion concentration (pH) and its significance in process control. In chapter nine, Dr. Sieber describes the examination of waste waters, a subject of growing importance to pulp and paper mills. Finally chapter ten forms an appendix to the entire volume. In it is described the preparation of many of the standard solutions and reagents required for the various analytical methods in the volume. There are also sixteen pages of useful tables, etc., which are supplementary to the text.

The book comes beautifully printed on good white paper and bound in a substantial brown linen cloth. The table of contents is unusually large, it being practically a synopsis of all the subjects treated. Reference is made convenient and easy by inclusion of both author and subject indices.

Schwalbe-Sieber has become recognized as a standard work on process control in the pulp and paper industry. The third, completely revised edition merits the consideration of all those who are familiar with technical German and are interested in the application of scientific control in their plant. The volume will be of value not only to technical men connected with the pulp and paper industry, but also to those associated with related industries, such as the explosive, the plastic and the rayon industries, or, in short, to anyone interested in the chemistry of cellulose.

Late Correction by Dr. Schwalbe

Dr. Carl G. Schwalbe has called attention in the *Papierfabrikant* for February 7, 1932, to an important typographical error in the book under review. At the botom of page 400 of the book, the amount of citric acid required for the Wenzl copper number method is stated as 20 grams, whereas the amount should read 50 grams chemically pure citric acid crystals, together with 25 grams C. P. copper sulphate and 144 grams C. P. anhydrous sodium carbonate dissolved to make 1 liter. Users of the book are asked to make this correction.

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◆ Golden Rod Stalks Unfit for Paper

The Bureau of Standards at Washington has proved by laboratory tests that golden rod stalks are unfit for the manufacture of paper products.

Microscopical examination of the stalks shows that a large part consists of pith cells, which fill the central portion. Next to this is a ring of short fibers and then a thin outer covering of somewhat longer fibers.

The pulping of the material in the usual manner with caustic soda yielded only about 37 per cent of unbleached pulp, air-dry, of papermaking grade.

◆ Luminous Paper

A paper that glows in the dark may be made by giving the sheet a coating of radio-active minerals or by the application of phosporescent substances like the sulphides of calcium, zinc or strontium in combination with tungstite (WO_3). Papers that have been treated with phosphorescent surfaces must be exposed to the sun during the day or they will not become luminous at night. For radium effects, mixtures of sulphide of zinc and mesothorium are used, radium itself being but rarely employed. Mesothorium, which is a by-product in the manufacture of incandescent gas mantles, gives off X-rays and these are absorbed by the zinc sulphide, causing fluorescence.

Paper and cardboard treated with such a mixture are luminous in the dark, even if they are not previously exposed to sunlight. The coating has, however, to be frequently renewed, as the X-ray emanations produce a molecular dissociation of the zinc sulphide. Unlike a simple phosphorescent mixture of the sulphides of calcium and strontium with tungsten oxide, the luminosity cannot be renewed by exposure to sunlight.

◆ THIRTY-EIGHT salesmen from the company's eastern wholesale distributors attended a three-day training course in pump construction and application, at the main office of Goulds Pumps, Incorporated, Seneca Falls, N. Y., February 1 to 3. The sessions included demonstration of Goulds pumps, their principles, construction features and applications to various jobs, also an inspection of the factory where the pumps are made.

New Development in Groundwood Production

An automatic control of grinder temperature.

By C. D. DeMERS
Taylor Instrument Companies

THERE may be some question as to the identity of the inventor of the Groundwood Process, i. e., whether it was Fenerty in 1838 or Keller in 1844, but there certainly can be no questioning the fact that the development of this process along modern lines of maximum efficiency and production has not kept pace with the development of both equipment and technique followed and used in many of our leading industries.

The principle of the wood pulp grinder has not changed during the ninety years that have passed since the first unit was developed. The design of the grinder, methods of driving the grinder, stones, controlling the pressure applied to the pressure cylinders, operating the burring or jigging lathe, and other mechanical details, such as measuring the amount of wood passing through the magazine of a magazine type grinder, has been greatly improved during the past twenty-five years.

These improvements, while tending to increase the productive capacity of the grinding units very materially, and the efficiency as measured in terms of a more uniform stock, to a limited extent, have done very little to improve the control of these units to a point where stock of uniform quality for a definite product can be produced. Consequently, today we find the same methods of stock control used that were being used twenty-five or thirty years ago.

This method of control, dependent almost entirely on the skill of the men in charge of the grinders, has developed a craftsmanship, enabling them to produce a fine grade of stock with a fair degree of uniformity, but like all operations dependent on the human element, it is subject to the difference in the degree of skill attained by different men and the many personal opinions as to what constitutes good groundwood stock.

Hand Control by Aid of Recording Thermometers

As an aid to the operators and a record of unit operation for the superintendents, a few mills have installed recording thermometers. These instruments, with bulbs installed at various points in the stone pit, have furnished chart records of the stock temperature in the pit, which enabled the operator, by manipulating a hand valve on the shower supply line, to maintain the grinding temperature closer to the desired point than was possible without this record.

The use of recording thermometers brought up the problem as to the proper location of the recorder bulb as well as the most suitable type of bulb and instrument to use. A check of the efficiency of this application developed the fact that the location of the bulb greatly affected the value of the chart record produced. Some installations were made with the bulb located in the shower end of the stone pit. This meant that the bulb affected by the cold shower water was not an accurate record of the average stock temperature in the pit, but only of that portion of it affected by the discharge from the shower pipe.

Other installations were made with the bulb located on the bottom of the pit directly beneath the grinder stone. Bulbs located at this point were often covered with slabs and stock that accumulated on the bottom of the pit, and, being in a comparatively dead spot, did not react to changes in the temperature of the stock flowing from the stone pit to the screens. Various types and lengths of bulbs were used; many of them located in the bottom of the stone pit were broken and torn away from the connecting tubing by the rakes and bars used in cleaning the slivers and slabs from the pit. Records made with instruments equipped with a short bulb, usually about 6 inches long, installed in a stone pit from 30 to 60 inches wide, did not represent the true average tem-

(Continued on page 1449)

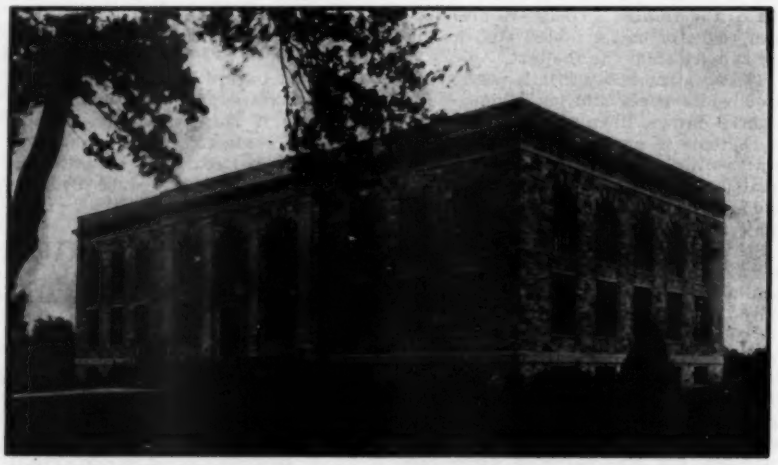
The Institute of Paper Chemistry

Description of building, arrangement and equipment. Kimberly Memorial Library and Laboratory to be finished next September.

THE Institute of Paper Chemistry, at Appleton, Wisconsin, opened its second collegiate year last September with a student body of twenty-eight, and in its new building which was formally dedicated on the twenty-third of September. The dedication service itself drew a large group of pulp and paper mill executives and technical men from all over the country. The dedicatory address was given by Mr. John Finley, editor of the New York Times. After the address, Mr. Ernst Mahler, the chairman of the Board of Trustees of the Institute, made the announcement that Mr. J. C. Kimberly of Neenah, Wisconsin, had given $100,000 to be used for the construction of the J. A. Kimberly Memorial library and laboratory, the building to be ready for occupancy by September, 1932.

The first building of the Institute is of steel frame construction, curtained by a Lannon stone exterior, backed by Haydite blocks. The building, which has two stories and basement, takes the form of a U with a front one hundred and fourteen feet long, a depth in the middle of fifty feet and two wings, of respective depths of sixty-three and eighty feet.

In general, the interior construction follows somewhat the same lines throughout the building. Walls are of Haydite blocks, covered on the first floor with tinted plaster and on the second with buff colored cement paint. The ceilings throughout the offices and laboratories are covered with blocks of Masonite insulation, highly desirable because of their sound absorbing qualities and appearance. The floor in the library is covered with alternate light and dark colored blocks of Masonite cushioned flooring set in a resilient adhesive directly to the cement floor. Throughout the remainder of the offices and laboratories, a cellized red oak block, set in mastic, has been used. Because of the desirable acoustic properties of the construction materials, sound transfer between rooms and down the halls is at a minimum. In the pulp laboratories and digester room, a smooth finish cement floor has been used. The woodwork throughout the building is of red oak, filled and waxed to a gray finish, exactly as applied by the Kewaunee Manufacturing Company on all wood cabinet work.



Institute of Paper Chemistry at Lawrence College, Appleton, Wis.

Pulp Laboratory in Institute of Paper Chemistry

The first floor of the main building and shorter wing are given over to the offices, lecture room, and library. These are all commodious rooms, well lighted by large steel sash windows, all of which are furnished with copper screens fixed to the inside of the sash. In the library, the new Johns Hopkins type of reading table has been used to insure a certain amount of privacy for the reader. The lecture room is furnished with oak chairs and lecture table in the same gray oak finish. A very complete collection of lantern slides and pictures relating to the field of pulp and paper technology is housed in the lecture room in an efficient system of filing drawers, constructed in a balopticon table; a Bausch and Lomb balopticon of the most recent type is available for use with the slides or for opaque reflection.

The second floor houses the student and research laboratories. Each of the two large student laboratories for work in organic chemistry, and physical and colloid chemistry accommodates sixteen students at one time. The organic laboratory is furnished with Kewaunee steel laboratory furniture constructed of heavy gauge, molybdenum Toncan steel, lead coated and enameled. The tops are of Alberene soapstone. Gas, water, steam, air, and 110 and 220 volts alternating current, are serviced to each table, and shut-off valves will enable any service line to be immediately cut off at each table. Numerous outlets for direct current are available in the various laboratories. For all other laboratories, a special purpose laboratory table has been designed in collaboration with the Kewaunee Manufacturing Company, con-

sisting of their black wood, waterproof, and chemical resistant top on heavy two-inch channeled angle iron supports. Such a table has the advantage of low cost and may be modified or replaced at low cost to fit any particular set-up required. Distilled water is furnished each laboratory from a central tin-lined storage tank in a special distilled water room located just under the roof. All hoods are constructed of Alberene stone with baffles of transite board. These are of the modified Cornell type. Ducts for carrying the fumes outside the building are of round transite pipe and fittings. Each hood or group of hoods is connected directly to an exhaust fan located immediately beneath a vent in the roof.

Beside the student laboratories, there are research laboratories for the members of the staff and other research laboratories for work of a special nature, such as is carried on by industrial fellows. One laboratory, for example, has been equipped to handle any of the problems which may arise in connection with the cooking or bleaching of rags; another will be devoted to problems related to the bleaching of wood pulp. Optical and photographic dark rooms are provided adjacent to the colloid laboratories.

The research laboratories have available a large number and variety of research instruments, such as a spectrophotometer, a large photomicrographic camera, refractometers, a color comparator, research microscopes for chemical and petrographic work, polariscope, colorimeters and potentiometer equipment.

The digester room is fitted with a complete pulping equipment provided entirely by various manufacturers who make equipment for the paper industry. In this room, the wood may be first chipped and then cooked either in a hundred pound Allegheny metal tumbling digester or in a three hundred and fifty pound welded digester lined with carbon brick. After cooking, the pulp is blown through bronze or Allegheny metal valves and pipes into heavy cypress blow-pits, and the exhaust gases passed through obnoxious vapor condensers and out of the building. The pulp in the blow-pits is then well mixed with wash water by "Lightnin' Mixers" and is pumped to the stock chest, thence to the twenty-four-inch wet machine. Pulp may be refined either in a rod mill which has a capacity of approximately seventy-five to one hundred pounds of pulp when operating continuously, or in the three beaters. These have capacities of from five to twenty-five pounds and are all equipped with washers. Bleaching is done either in low or high density bleachers. A pulp shredder has been provided for breaking up pulp.

The cooking of rags is accomplished in a one hundred fifty pound rotary rag boiler, which has been set up so as to be available for a variety of types of rag cooking. After cooking, the rags are washed and bleached in the usual manner.

The pulp testing laboratories on the second floor of the digester building have been furnished with three complete sets of pulp testing equipment, including beaters, sheet molds, driers, and so forth. The pulp may also be refined in pebble mills. The paper testing equipment includes all of the necessary apparatus for a complete physical testing of paper for glare, opacity, stretch, tear resistance, size, ink penetration, density, fold, ream weight, fastness to light and so forth. This is to be housed in the constant humidity room which has been built in the basement. This room, twenty by twenty feet, which has floor, ceiling and walls insulated with four thicknesses of Masonite laminated shiplapped insulation and covered with Tempered Presdwood, will handle conditions of relative humidity above forty per cent, and at temperatures between sixty and eighty degrees fahrenheit. In connection with this, there is a low temperature room which may be kept at as low a temperature as zero degrees centigrade.

The Kimberly Memorial

The Kimberly Memorial will house the library and colloid and optical laboratories. It will be of the same general type of construction as the first building with a frontage of seventy-eight feet and a depth of forty-one feet. The various dark rooms will be located in the basement of this building, and will be equipped not only for photographic purposes, but also for work with the polariscope and spectro-photometer. Laboratories will also be provided in the basement for work requiring absence of vibration. The various rooms of the library, including the main reading room, a recreational room and a stack room, will occupy the first floor. These rooms will be panelled in pine, and special care will be taken to make available the very best kind of library service. On the second floor, will be the student and research laboratories in colloid chemistry, a conference room and the large laboratory for microscopic work. The rooms vacated by the library and the colloid laboratories in the present building will be converted into offices and research laboratories.

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◆ George Washington's Visit to a Paper Mill

The February circular of Japan Paper Company, 109 East 31st Street, New York, printed on an English handmade paper, features an account of George Washington's visit to a paper mill at Roslyn, Long Island, New York, as noted in his diary under date of April 24, 1790, the following entry being reproduced:

"Saturday 24th. Left Mr. Young's before six o'clock and passing Mosquito Cove breakfasted at Mr. Underdunk's at the head of a little Bay; there we were kindly received and well entertained. This gentleman works a grist and two paper mills, the last of which he seems to carry on with spirit and profit."

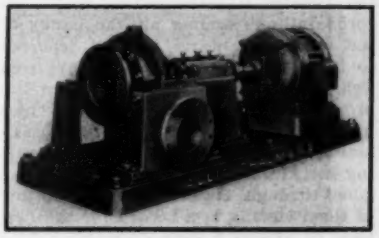
In an old number of the *Roslyn News* this incident of Washington's visit to the paper mill was reported as follows:

"He then descended to the paper mill and after examining and inquiring into the process of making paper he was requested to dip the wire sieve into the pulp and, 'tis said, actually made a sheet of paper which was preserved long after."

◆ THE MANAGEMENT of the St. Louis plant of Joseph T. Ryerson & Son, Inc., has been taken over by Harold B. Ressler, vice president at Chicago. Mr. Ressler was formerly the St. Louis plant manager, having been in that capacity for fifteen years. R. B. Wilson, manager of sales of the St. Louis plant, will be the senior resident executive.

◆ Pumps for Hot or Cold Acid

Allis-Chalmers Manufacturing Company, Milwaukee, Wis., is building a new pump for handling acids in process work. It is of the single suction type and all parts coming in contact with the acid pumped are made of chrome steel. To insure uniform expansion from the center of the pump when handling acids of high temperature, the casing is supported on the horizontal center line by



brackets and it is also keyed on the vertical center line underneath the water cooled stuffing box.

The pump is so constructed that the rotating element including the self-aligning, anti-friction, bearings and the Falk coupling can be removed through the suction end of the pump without disconnecting the discharge piping or casing brackets or disturbing the motor.

Tests of these pumps show very high efficiency and quiet operation.

◆ GRIPTITE Belt Dressing is a newly developed dressing for rubber belts just introduced by The Diamond Rubber Company, Inc., Akron, Ohio. This dressing is described as not greasy, not inflammable, nor harmful to belt or pulley. The manufacturer claims it doubles the pulling power of the belt and its effectiveness increases with use; that it retains its tackiness much longer than other dressings.

◆ WILLIAM J. LAWRENCE, president of Paper Makers' Chemical Corporation, a unit of Hercules Powder Company, was elected a director of the Hercules Powder Company at a recent meeting of the board of directors. The board also declared the regular quarterly dividend of 75 cents on the common stock, payable March 25 to stockholders of record March 14.

The MONTH at WASHINGTON

CONGRESS—If forecasting is in order, the neck of the depression has been broken by the sheer force of Congressional action, and the two bills which did it were the Reconstruction Finance Corporation and the more recently passed bill — Glass-Steagall Bill, which will help out the banking situation.

The total number of bank suspensions in the United States during 1931 was 2,290, as compared with 1,345 in 1930 and 642 in 1929 and 491 in 1928. Is there any further question of why the depression carried into 1932, when deposits in banks suspending for the year totalled $1,759,484,000, as compared with $864,715,000 in 1930 and $234,532,000 in 1929. Who absorbed most of this loss—business and investors? What else drove money into hoarding?

It is significant to note that no national bank failures were recorded in eight days and the fact that this legislation which was about to be passed had a lot to do with the situation. In fact, for the first time in many moons the Federal Reserve Board, which records failures among all the banks of the country, had no failures reported to it during a full business day from Feb. 17th to Feb. 25th. Unbroken improvement has been evident, and since national banks account for approximately one-third of the country's banking institutions, the fact that they have gone through eight days without any of them closing is a record for the first time in almost a year.

Other plans now before Congress which will tighten up the situation and which the President is urging them to pass, are regulation of railway systems and relief of bank depositors. It is significant to note that in the panic of 1893 five leading railroads failed. During this depression, no such calamity has happened, although practically all of the railroads had suffered a tremendous loss in operation in 1931 which had to be absorbed by previously accumulated surpluses and there is no doubt that if Congress had not come to their relief that some of them would have taken the count in 1932.

While it may take all of 1932 to convince us that we are coming out of the depression, and while business may mark time during the Presidential nomination conventions and up to the time of the election in November, it is very clear to those in touch with the situation in Washington that the break has come; that we are coming out of the mire, and that business confidence will pick up.

The Glass-Steagall Bill—The President expressed the view that it, together with the additional capital provided for the Federal land banks and the creation of the Reconstruction Finance Corporation, would strengthen the whole credit structure and open the channels of credit by permitting banks more adequately to serve the needs of agriculture, industry and commerce. Among other things, it enables the Federal reserve banks to furnish accommodations to many banks on sound assets heretofore unavailable for rediscount purposes.

The gradual credit contraction and the failure of banks during the past eight months have been a major factor in depressing prices and delaying business recovery. With bank failures reduced to a minimum and with banks opening their doors again to business loans, the business of the country will take on a better complexion of confidence and business will be getting back to normal — this regardless of which political party is victorious at the polls next November.

The bill provides the necessary assurances and facilities now to enable them to reach out and aid business and industry in such a fashion as to increase employment and aid agriculture.

Significant also is the first increase in wholesale prices in more than three months recently recorded. This was not the first time during the depression that prices had advanced, but the failure of banks again depressed prices. No such obstacle now confronts business recovery.

The increasing confidence will soon be reflected in the stock market where stocks and bonds have soared and fallen, but where the average price of 40 leading bonds rose for the first time in three weeks.

Just what is the purpose of the Glass-Steagall Bill? For one thing, it seeks restriction in security markets for financial institutions, and national and state banks would be limited in the use of reserve facilities as a means of stock speculation. It effects a revision in the Federal Reserve Act and the National Bank Act, with provisions covering branch banking, chain and group banking, investment affiliates, security loans, rediscounting, liquidation of closed banks, reserve board membership, reserves of member banks, open market transactions, foreign relations of reserve banks, currency and real estate loans. It creates an agency to liquidate failed banks.

Is there any wonder that a restoration of normal business conditions throughout the country was predicted with the passage of this bill? It loosens up credits, and dispels the fear that weighs upon the minds of the people with regard to the stability of banks, as well as restores confidence generally among the people. It also supplements the Reconstruction Finance Corporation Act, thus putting teeth into the administration's power to financially rehabilitate the country. (H.R.9203,S.3616).

Other Legislation — The most important other legislation now before Congress is the revenue bill. Up to the moment of writing this report, taxes are not to be retroactive, and the whole idea of the drafters of the bill is a nonpartisan measure based on the plan of balancing the budget to maintain the Treasury credit. Rates, details and the subject of excise taxes are being thrashed out. The present laws concerning income tax returns of affiliated firms have not been changed. Of course, no one can forecast what may happen to the bill when it is finally enacted, or what riders may not be tagged on. Agreement on a sales tax has been reached by the Committee of Ways and Means and that a manufacturers' sales tax will go in the bill, excluding among other things, however, taxes on books and other materials used in public and private schools, churches and institutions for the blind, also exempting newspapers, magazines and periodicals. In framing tax legislation, Congress has in mind the highest taxation consistent with recovery, with increases to the limit that will not hurt business, and including taxes on income, inheritance and gifts, as well as a sales tax. There will be an increased or graduated tax on corporations making high returns on their investments. Effort is also being made to amend the revenue laws to provide for the collection of an income tax on capital invested in foreign countries. (H.R.9589.)

The Senate Judiciary committee is considering the three Nye bills (S.2626, 2627, and 2628) to provide for the legalization of rules drawn in trade practice conferences, to create a federal trade court, and to classify unfair methods of competition. The views of the Attorney General have also been solicited on this subject. The legislation is designed to give assurance to business that it is proceeding along the right lines and is not in violation of the anti-trust laws.

In this connection, agitation has also been on foot to secure a two-year sus-

pension of the anti-trust statutes as a measure to aid trade and an emergency reconstruction measure, or at least a temporary modification of the anti-trust laws so as to stabilize business conditions.

Hearings are being held on the Vesta bill to procure a national system of laws for trade-marks. It is urged that under modern conditions of distribution and large scale advertising the trade-mark is not merely an indication or source of origin, nor is it merely a distinguishing mark or symbol, but a commercial signature. It is not only a symbol of good will but it is an agency for the creation and perpetuation of good will. It is the most constant salesman in the manufacturers' employ, representing tremendous investment in ingenuity and advertising. It is a guarantee to the customer that the goods bearing it will give him the same satisfaction which other goods have previously given. A single, national system of jurisprudence on trademarks would, therefore, seem to be a logical and desirable end, the same as now exists concerning patents. Other arguments are that teeth should be put into the law for penalties for violation of trade-mark laws, to offset the epidemic of counterfeiting valuable trademarks which has shown up as a by-product of bootlegging.

The President has asked Congress for special legislation for reforms in the national bankruptcy laws and criminal procedure in the Federal courts. Bankruptcies increased from 53,000 in 1928 to 65,000 in 1931, with losses to creditors in the years named of $740,000,000 and $911,000,000, respectively. The present bankruptcy laws are defective and hold out inducements for waste of assets and they permit exploitation and disregard to the rights of creditors, with many injustices to bankrupts themselves, it is pointed out.

Senator Fletcher introduced a bill which would provide bank guaranty funds for the protection of depositors. A bank depositors guaranty fund would thereby be created for the protection of depositors in banks under federal supervision, and would require a bank to deposit a sum equal to 5 per cent of its capital stock with the U. S. Treasury, to constitute a guaranty fund. In the event of failure of any bank, depositors would receive their sum within 10 days after the banks' doors were closed.

The Senate passed the bill to restrict injunctions in labor disputes (S.935), known as the anti-injunction bill, by a vote of 75 to 5, after adopting minor amendments. The bill now goes to the House for approval. Favorable action on the measure represents the culmination of efforts to obtain such legislation instituted in December, 1927. Opponents of the measure say that it is not constitutional, interferes with property rights, and would not prove effective for the purpose; others argue there is a widespread demand for public restraint on courts, that injunctions prohibit labor from voicing proper protest, and that courts have abused the injunction rights. The author of the bill, Senator Norris, points out that the proposed legislation limits the injunction to such cases as common, ordinary justice demands, yet permits laboring men to organize for the purpose of improving their conditions, and prevents great aggregations of capital from combining against the weak and the poor in any way which would deprive them of the ordinary rights of citizenship.

Congress is also toying with an unemployment relief bill which will saturate the country with millions — in short, $700,000,000 for unemployment aid by loans to the states of which $200,000,000 is for additional federal projects for public buildings (H.8088, S.3696). A number of states cannot borrow for this purpose, and so the Government proposes to loan it to the state to disburse for unemployment relief, the states to pay it back by such means as they can. Part of the money also goes to federal-aid highway construction. The purpose of the legislation is to grant emergency relief by co-operation of the Federal Government with the several states in relieving hardship and suffering.

Other bills before Congress are included in the following resumé: H.R.9692 to grant consent to states to tax property employed and business done, in interstate commerce; H.R.9544 declaring Saturday of each week a legal public holiday; H. R. 7800 to stabilize the purchasing power of money; H.R.7806 to establish a Federal Guaranty and Insurance Corporation to protect bank depositors; S.2657 to establish and create a National Employment Co-operative Association, to secure to unemployed American citizens the right to work advantageously for themselves in producing food, shelter, clothing and commodities.

A number of bills have been introduced to equalize tariff duties by compensating for depreciation in foreign currencies.

Tariff Investigation—The Tariff Commission has instituted an investigation into the effect of the depreciation of currencies and international exchange upon American commerce. Major commodities, involved in foreign commerce in countries having depreciated currencies, will be studied first.

It will be recalled that the Commission is already conducting an investigation on the subject covering the importation into the United States of mechanically groundwood pulp, chemical wood pulp, unbleached or bleached, and pulpwoods. Both this specific study and the wider survey will be pressed as rapidly as possible.

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◆ THE FIRM of Hermann Frischer Chemisch-Technisches Buro, Berlin, Germany, has, after twenty years of successful operation all over Europe, established a branch office in this country under the name of H. H. Frischer & Co., 24 Monroe Place, Brooklyn, N. Y., as consulting engineers for the Heavy Chemical Industry. Dr. K. F. Sonnenstuhl is the resident manager.

◆ New Catalogues and Publications

Chain Belt Company, Milwaukee, Wis.—An attractive catalogue has just been issued covering this company's new line of Rex Roller Chains. The book contains prices, weights and information on the design and application of this line of chains. In addition, the catalogue contains a considerable amount of engineering data. The book is nicely bound, the cover stamped with gold. Copies on request.

Chromium Corp. of America, 120 Broadway, New York—A new booklet, No. 6, on Industrial Chromium Plating has been prepared with special reference to the paper industry, as chromium plating has been applied successfully to a large number of paper machinery parts. There is much useful information concerning the hardness characteristics of metals, in addition to notes on the corrosion-resistance properties of chromium. Also illustrations are shown of the specific applications of Crodon plating which is the trade-mark name of the company's chromer plate. Copies upon request.

Howard Paper Co., Urbana, Ohio — A beautiful portfolio has just been sent out by this company carrying samples of stationery on Howard Bond in different weights and finishes. The portfolio is made of heavy white stock, and the front cover displays an exceptionally fine reproduction of a landscape with a fountain sending forth "Clear Sparkling Water," which is the title of the drawing. The subject is particularly appropriate, since clear sparkling water is essential to good papermaking.

International Stacey Corp., Connersville, Ind.—The Root - Connersville - Wilbraham Division of this company at Connersville, has issued bulletin 31-B10 descriptive of the R-C-W Victor-Acme gas pumps. These pumps are designed for the handling of clean gas on industrial services. The features of design are briefly explained, and there are a number of illustrations.

E. D. Jones & Sons Co., Pittsfield, Mass. —The Jones Pulper, a machine for handling rejections and waste, is the subject of bulletin just issued. Interior and exterior views of the pulper show its construction and operation. Low power consumption is a feature, and the claim is also made that materials can be repulped by the Jones Pulper without change of fiber length or strength. The pulper has a capacity of 1,000 to 2,000 lbs. an hour, and a 30 hp. motor suffices for the hardest requirements. Copies on request.

Lobdell Car Wheel Co., Wilmington, Del.—A revised bulletin L-32 on the subject of Grinding, Care and Upkeep of Paper Mill Rolls, will undoubtedly be valuable to those whose duty it is to look after the upkeep of the paper machine. The contents include a quantity of facts and data as to the nature, use and care of rolls. There are illustrations, diagrams and tables which add materially to the text. Copies gratis.

Smith & Winchester Mfg. Co., South Windham, Conn.—A loose leaf bulletin, available complete or in sections, describes in detail the S & W line of paper bag machinery. Besides the different types of tubers and bottomers, there is described bottle wrapper machines, bag delivery attachments, banana bag machines, etc.

BOOKS

Booklet of Paperboard Standards—A revised edition of the Standards adopted by the Paperboard Industries Association, with changes to February 1, 1932. The contents include Standard Boxboard Definitions; Gauge Lists; Standard Terms, Reservations, Extra Charges; Standard Contract Form, etc. Copies have been supplied to members of the association, and a limited number are available for further distribution at 25 cents a copy. Address Paperboard Industries Association, 608 S. Dearborn St., Chicago.

+ CANADIAN NEWS +

◆ Urge Curtailment of Wood-Cutting

Curtailment of the cut of wood by pulp and paper companies on Crown lands is being urged by the Canadian Pulpwood Association, and a petition has been sent to the provincial governments of Ontario, Quebec, New Brunswick and Nova Scotia, recommending immediate action by these governments. At the recent annual convention of the Canadian Pulpwood Association the following resolution was unanimously adopted:

"Acutely conscious of the distress and hardship now prevalent throughout the rural districts due to the lessened demand and the unprecedentedly low prices obtainable for their various products, particularly pulpwood and lumber; realizing that it is the sincere wish of the various governments to contribute to the alleviation of the distress, without resorting to the expenditure of large sums of money on unemployment relief; satisfied that a restriction of the cut on Crown lands by the large pulp and paper companies would immediately improve this situation by creating a larger demand for the production of the farmer and settler, without, however, increasing the cost of wood to the mills; knowing that the farmers and settlers are readily able to provide adequate quantities of wood to offset such proposed curtailment; recognizing the pressing necessity for adequate conservation of publicly-owned wood which would likewise be accomplished by the action herein suggested; and confident that the Government will welcome practical suggestions to this end, Canadian Pulpwood Assocation, embracing in its membership over 13,000 pulpwood producers and dealers from Sydney, Cape Breton, in the east to Fort William and Port Arthur, Ontario, in the west, in annual convention assembled, are unanimously resolved that immediate action on the part of the Provincial Governments of Ontario, Quebec, New Brunswick and Nova Scotia that would curtail the cutting by pulp and paper companies on Crown lands, so long as there is any quantity of farmers' or settlers' wood on the market unsold, would do more than any other single thing to restore prosperity to the rural districts of these provinces.

"On behalf of its widespread and representative membership, the Association respectfully petitions the several Provincial Governments accordingly."

◆ Co-operate to Obtain British Newsprint Market

According to a statement made last month to newspaper correspondents by Sir Richard Squires, Prime Minister of Newfoundland, his Government is working hand in hand with the Canadian Government to secure preference for Empire newsprint in the British market. He said he had instructed Hon. D. James Davies, trade commissioner for Newfoundland in London, to co-operate in closest harmony with the Canadian trade commissioner in making representations to the British authorities. Private despatches were exchanged between Hon. Mr. Davies and the Prime Minister, but the latter would not comment on them.

Strong opposition has been raised in the House of Commons to the Government's proposal to exclude newsprint and woodpulp from the provisions of the trade bill, thus leaving both these commodities on the free list. As Empire products are exempt from the provision of the bill which places a 10 per cent tariff on nearly all imports, the proposed exclusion would deprive Canadian and Newfoundland newsprint and pulp from a 10 per cent preference. A number of prominent newspapers and members of Parliament have come out quite strongly in favor of including these two commodities in the provisions of the bill, so as to give Canada and Newfoundland the benefit of the preference.

◆ Contemplating New All-Water Route

Canadian newsprint may be shipped by a new all-water route in the early spring, if present negotiations under way between Dominion manufacturers and Buffalo steamship operators mature. Under the proposed scheme, newsprint thus shipped would travel via Great Lakes ports at a very material saving over the rail haul cost at present involved, vessel owners claim. While Three-Rivers, Que., is named as the originating point of the proposed traffic, it is expected that other St. Lawrence Valley paper mills will participate in the shipping scheme.

With the completion of the New Welland Canal, the large lake freighters, which hitherto could not travel east of Lake Erie, will be able to carry wheat to Montreal. It is proposed that, after unloading their grain at Montreal, they should proceed one hundred miles further down the St. Lawrence to Three-Rivers, to take on a return cargo of newsprint.

While shipping agents and vessel owners at Buffalo are inclined to refuse details of their pending negotiations, it is said that the 1932 movement of paper on the Great Lakes will be well in excess of 500,000 tons if present plans are carried forward.

◆ Newsprint Production Continues to Decline

Newsprint production in Canada during the month of January amounted to 171,321 tons. While this is slightly higher than the 165,173 tons produced in December, it is 11,752 tons, or 6 per cent, less than the output for January 1931. The output per operating day, however, shows a very slight increase, being 9,732 tons in January, 1932, as compared with 9,718 for the same month last year. The exports, on the other hand, showed a small increase in value but a considerable increase in tonnage. The exports for last January were valued at $8,661,086, as compared with $8,641,937 in January, 1931, and $8,299,049 in December. The comparatively small increase in value over January of last year reflects the reduction in price in the interval, for in the past month exports reached a total of 172,913 tons, against 153,362 in 1931.

It has been decided that newsprint production reports hereafter will not carry capacity figures and operating percentages, as such figures no longer coincide with the hard facts of operation. Based upon operating records during the best times over a period of years and with the addition of new machines, a total of 19,000 tons daily capacity for the North American newsprint industry was calculated in the early part of 1931. Now, the picture is changed. Not only are there no more machines building, but it is also obvious that some machines cannot be operated at present price levels. In other words, the capacity of the industry for practical purposes cannot be determined simply by compiling the possible speeds and trims of all existing machines—whether they are running or not—but is definitely limited by a multitude of economic factors. For these reasons reports will henceforth be confined to actual production, shipments and stocks on hand. What might be produced under favorable conditions is already a matter of sufficient record.

◆ THE ANNUAL REPORT recently issued by the Newfoundland Board of Trade showed that the newsprint industry, operating at capacity during 1931, provided the one bright spot in Newfoundland business during the year. Newsprint exports from the mills at Cornerbrook and Grand Falls totaled 267,420 tons, valued at $17,134,807, or more than 50 per cent of the total exports of the country, which amounted to $33,537,369.

◆ SHORTAGE of water in Grand Falls has forced the International Paper mill at Cornerbrook to curtail operations, No. 5 machine having been shut down for an indefinite period.

QUEBEC

◆ Rolland Paper's Satisfactory Year

Shareholders of Rolland Paper Co., at their annual meeting in Montreal last month, were presented with a report covering 1931 operations, which, considering the conditions obtaining, was very satisfactory. The company earned its bond interest 2.34 times, including

premium on American funds. Working capital showed an improvement, standing at $1,020,331, against $997,373 at the close of the preceding year.

Earnings for the period, after operating expenses, all taxes and provision for bad and doubtful debts, amounted to $346,876, as compared with $379,358 for the previous year, and were equivalent to 2.34 times bond interest, including premium on American funds. After providing $84,000 for depreciation, against $72,000 in 1930, net available for dividends was $114,670, as compared with $169,858. The 1931 net earnings were equal to 1.27 times the dividend requirements of $90,000 on the company's 6 per cent preferred shares. Deduction of preferred dividend and proportion of organization expense written off left a net addition to surplus of $22,670, which, with a credit of $8,500 for insurance reserve, brings the total profit and loss surplus up to $312,204 at December 31, 1931.

◆ A FIRE that raged for two days last month completely destroyed the 35,000-cord pulpwood pile at the Bromptonville mill of the Brompton Pulp and Paper Co. The roof of the company's staff house was burned away and the side of the building badly charred. A small sawmill adjoining the wood pile was razed in less than 15 minutes. Fortunately, aside from minor bruises and burns, no one was injured.

◆ Consolidated to Re-Open Port Alfred Division

According to a statement issued a couple of days ago by President L. J. Belnap, Consolidated Paper Corp. plans to reopen the Port Alfred Division for operation on April 18, gradually closing down its mill at Shawinigan Falls. Since the mill was closed about a year ago, it has been kept in readiness for operation, but the Corporation has adhered strictly to its plan of operating other economical units to capacity as a means of reducing their inventory of pulpwood.

For some months experts of the company have been occupied in calculating the amount of wood remaining at the Belgo Division, and it is estimated that this will be consumed on or about May 28th. Plans have been completed by the management for the gradual closing down of activities at Shawinigan Falls so as to avoid any interruption in supplies of paper to the numerous newspapers that are served by the Corporation in Canada, the United States and elsewhere.

The Port Alfred Division is an important unit of the corporation, situated on seaboard at Port Alfred, at the head of the Saguenay River, with splendid facilities for shipments by water as well as by rail, and it is planned to take advantage of these facilities to the utmost extent. The mill is equipped with four modern machines, each with a capacity of 125 tons of newsprint per day. It is also equipped to manufacture 50,000 tons of sulphite pulp a year above that which it requires for its newsprint manufacture, and also a limited tonnage of boards suitable for building and packing purposes.

◆ FAILURE of Donnacona Paper to meet its interest payments on the A and B debentures of the company, due at the beginning of February, failed to come as a surprise in the light of the report presented by the company for 1930 and the fact that conditions in the past year were such as to preclude any improvement in earnings. Interest on the first mortgage bonds has been paid. There are outstanding $4,000,000 of the A debentures and $600,000 of the B debentures, both bearing interest at the rate of 6 per cent and maturing in 1948.

◆ THE QUEBEC Legislature has passed a bill empowering Mr. Justice Delorimier, of Montreal, to settle all damages in litigation between Freeman T. Cross and the Gatineau Power Co. over a water power at Meech's Creek, tributary of the Gatineau River. Litigation in this connection has been proceeding for a number of years.

◆ WINTHROP BRAINERD, vice president of Canadian Industries, Ltd., has been appointed to the board of Building Products, Ltd. Mr. Brainerd is widely known to the chemical trade of Canada and the United States and has been associated with the operating branch of the present company for the past thirty-seven years. He is a director of the parent and subsidiary companies of Canadian Industries, and is also on the board of Dunlop Tire and Rubber Co. of Canada, Ltd.

◆ ELLWOOD WILSON has resigned his position as chief forester of the Consolidated Paper Corp., and has been appointed Professor of Sylviculture at Cornell University. Mr. Wilson is himself a graduate of Cornell, and his work, both scientific and practical, in connection with the maintenance and development of pulpwood resources of the Laurentide Co. (now part of the Consolidated Paper Corp.) has earned for him a world-wide reputation.

◆ ERICH RICHTER, formerly chemist of the British Columbia Pulp and Paper Co., Vancouver, B. C., is now chemical engineer at the Metabetchouan Sulphite and Power Co., which owns and operates a 48-ton sulphite mill at Desbiens.

◆ GATINEAU Power Co., a part of Canadian Hydro-Electric Corp., has commenced the construction of additional substation and transmission line facilities in order to provide for expanding electric power requirements in the Ottawa and Hull districts. The capacity of the Val Tetreau substation, the most important substation in the company's system, for supplying 11,000-volt power is being increased from 40,000 to 80,000 hp. through the installation of three additional 10,000 kv. a. transformers of the outdoor switching type, and additional 110,000 and 1,000 volt switching equipment. Practically all the material and equipment used is manufactured in Canada. Cost of construction is being met from funds already available, so that no new financing will be involved.

◆ SETTLEMENT was made last month in the Superior Court at Montreal in connection with the disputed measurement of pulpwood delivered by the G. S. Kerr Co., Ltd., to the Hall Corp. of Canada, when Mr. Justice Duclos dismissed an action for $3,112.95 brought against the corporation by the Kerr Co. The wood, delivered to the corporation for the Algonquin Paper Co., was supposed to measure 2,467 cords, and according to the plaintiff, that amount was delivered. The defendant, however, claimed that only 2,321 cords were delivered, and at trial much of the evidence revolved about the methods of measurement used.

◆ DRYDEN Paper Co., with mills at Dryden, Ont., and the Brompton Pulp and Paper Co., with mills at East Angus and Bromptonville, Quebec, have appointed Paul Sabel and Co. as sole representatives in England for kraft paper. Brompton is the oldest paper concern in Canada and it produces a high grade of M. G. and unglazed kraft. It also produces M. G. sulphites, folding box boards and newsprint, of which quantities will be available for the British market.

ONTARIO

◆ Provincial Paper Earnings Declined

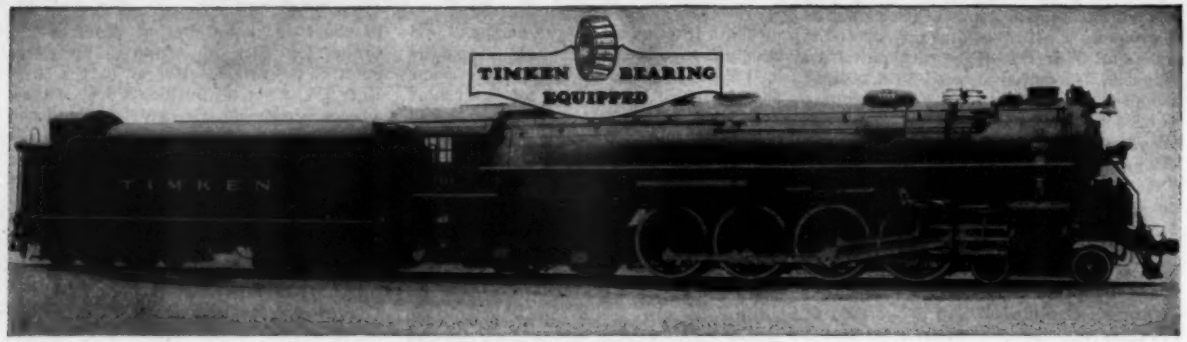
For the year ended December 31, 1931, Provincial Paper, Ltd., shows earnings, in its recently published report, of $782,784, before interest and depreciation, which compares with $995,748 on the same basis in 1930. From these earnings there was deducted interest at $207,645, leaving a balance of $575,139. The usual preferred dividends were paid during the year, amounting to $245,000. Further deduction of a liberal write-off for depreciation at $250,000 left a surplus on the year of $80,139. This amount, together with a credit of $672,430 in the surplus account as at December 31, 1930, made a total of $752,569, which was carried forward to 1932. Interest charges were earned more than two and one-half times after charging depreciation.

In combined output Provincial Paper is the largest manufacturer and distributor in Canada of high grade coated and book papers, its four plants, all in Ontario, operating eight paper machines, six paper coating machines and sulphite and groundwood mills having a daily capacity of paper production of more than 190 tons. Early in 1930 all the common stock of the company was acquired by the Abitibi Power and Paper Co.

◆ Ask for Receiving Order Against Great Lakes

Judgment was reserved last month in a petition for a receiving order against the Great Lakes Paper Co., brought by the Inland Coal and Dock Co. The petition was heard before Mr. Justice George H. Sedgwick in bankruptcy court

THE TIMKEN LOCOMOTIVE



100,000 miles without bearing trouble

A revolutionary accomplishment in locomotive operation

Again Timken has successfully pioneered a great forward step in anti-frictionization, and as a result, another important chapter has been added to the history of railroad development.

The Timken Locomotive was the first locomotive in the world to be completely equipped with anti-friction bearings on all axles—leading truck, driving wheels, trailer truck and tender trucks.

It was built by Timken to demonstrate the advantages of Timken Bearings in locomotive operation, and was placed in service on April 15, 1930. In January this year, the Timken Locomotive completed its official service test of 100,000 miles. This mileage was made on 14 railroads in regular passenger and freight service, and under every conceivable running condition.

Tough as locomotive operation is on bearings, the Timken Bearings in the Timken Locomotive have given no trouble whatever. No bearing repairs or replacements have been made.

Railroad master mechanics and engine foremen know what this remarkable performance means. They will tell you of the tremendous savings it will effect in locomotive maintenance... the dependability it assures.

It may seem a far cry from locomotives to paper mill machinery, but the same exclusive combination that has enabled Timken Bearings to do what had never been done before in all railroad experience, assures more economical operation; greater dependability; lower maintenance costs; and longer life for paper making machines, dryers, fourdriniers, calenders, jordans and all other types of equipment.

That combination is Timken tapered construction; Timken positively aligned rolls; and Timken-made steel—the combination that eliminates friction and carries all radial, thrust and combined loads at the same time. It will pay you to specify Timken-equipped.

THE TIMKEN ROLLER BEARING COMPANY, CANTON, OHIO

TIMKEN *Tapered Roller* **BEARINGS**

at Osgoode Hall, Toronto. Applicants claimed they were unsecured creditors for $255,000 worth of coal supplied to the paper company.

F. R. McKelcan, K. C., appearing for the National Trust Co., said his firm had issued $10,000,000 of bonds on a first mortgage on the Great Lakes Paper Co.'s property, by an agreement in 1928. The paper company defaulted interest payments and last July the National Trust Co., as trustee for the bondholders, was appointed receiver and manager. Mr. McKelcan suggested the coal company's application should be under the Winding-up Act rather than under the Bankruptcy Act.

E. W. Backus, of Minneapolis, president of the Minnesota and Ontario Paper Co., associated with the Great Lakes company in a contract for supply of newsprint, was a witness at the hearing. Referring to the contract agreement, Mr. Backus said if the Minnesota company refused to carry it out, the trustees would apply for an injunction either in Ontario or Minnesota. The Minnesota and Ontario Paper Co. went into receivership a year ago. Mr. Backus feared, if the Great Lakes company were put into liquidation, the receiver of the Minnesota company would contend they were not obliged to carry out the contract.

◆ Assignment of Syrett Paper Co.

Reporting liabilities amounting to $98,909, C. V. Syrett Paper Co., of Toronto, has made an assignment for the general benefit of its creditors. Preliminary report of the company's affairs submitted by O. E. Lennox, official receiver, at Osgoode Hall, estimates that as against liabilities the company has assets of $99,118, which are listed as follows: stock-in-trade $58,937, book debts $34,078, trade fixtures $6,542, and cash $100. W. D. Glendinning has been appointed custodian of the company's estate.

Liabilities include a secured claim of the Imperial Bank of Canada for $30,000, a claim of Wayagamack Pulp and Paper Co. amounting to $25,000, and a claim of St. Lawrence Paper Bag Co. for $14,000.

◆ THE FORT WILLIAM mill of Abitibi Power and Paper Co., which was recently reopened, is being operated on a four-shift basis, as is the same company's mill at Sault Ste. Marie. It is sometimes said that the shortening of hours, so as to divide the day's work into four shifts instead of three, and thus afford employment to a larger number of workers, tends to uneconomic plant operation; but this does not appear to have been the experience at the Abitibi company's mills.

◆ AT THE ANNUAL meeting of shareholders of Interlake Tissue Mills Co., which was held last month in the company's head office in Toronto, the usual quarterly dividend was declared. The directors of the company were re-elected; and, following the annual meeting, a meeting of the directors was held and the officers of the company were reappointed.

◆ OWING to the operation of a sand pump at one end of the Old Welland Canal for the purpose of clearing away large deposits of sediments which had accumulated, some of the paper mills in and around Thorold which are dependent on the Old Welland Canal for their water supply, were considerably inconvenienced some time ago by reason of the extremely dirty state of the water. The operation of the pump was responsible for a certain overflow that discolored the water to such an extent that some of the mills found themselves unable, for some time, to make their brighter-colored white grades.

◆ CANADA SAND PAPERS, LTD., Preston, have obtained a charter to manufacture all types of abrasive papers and cloths coated from such materials as flint, garnet, emery, etc. E. F. Stark, formerly of Abrasives, Ltd., Brantford, is the manager of the new company.

◆ THE LONDON Paper Box Co., of London, Ont., has under consideration the erection of a plant for the manufacture of paper boxes in Montreal. A site has been purchased and it is expected that work will go forward in the spring.

◆ Reducing Pulpwood Inventories

While the Fort William Division of Abitibi reopened early in January, the The Pine Falls Division will be shut down some time in April, as it is estimated that by that time all reserve of wood cut will have been exhausted.

The keynote of Abitibi's present policy is the liquidation of the huge pulpwood inventories held at their various mills throughout the Dominion; and no woods operations will in the meantime be conducted until the depression lifts a little or until necessitated by the fulfilment of existing contracts. At the present time the balance sheet shows assets some $10,000,000 in advance of bank and other liabilities, and the management figures that operation of the low cost mills will go far to restore the former liquid condition of the company.

BRITISH COLUMBIA

◆ THE PLANT of the Westminster Paper Co., New Westminster, is operating a full shift continuously. In the steady demand noted for the company's products, E. M. Herb, assistant manager of the plant, sees a reflection of a general improvement in conditions throughout Canada. Export business is somewhat quiet at present, but this is quite normal, and the development in domestic business which has resulted from an aggressive sales policy is keeping the plant working full time.

◆ THE WOOD AND ENGLISH Logging Co., Vancouver, is now busily engaged in shipping between 300 and 350 tons of chipped hemlock per day to Port Townsend, Wash., for pulp mills. The hemlock chips are produced at the Wood and English Logging Co.'s plant through the use of chipping machinery which was recently installed at the mill as auxiliary equipment at a cost of $65,000. The chipping machinery was put in to utilize waste ends previously burned, but at the present time the market for the chips is proving more lucrative and dependable than the market for logs and lumber. Under present conditions the sawmill is being operated as a break-down plant for the chipping equipment, and all hemlock, birch and balsam logs are completely reduced to chips.

NEW BRUNSWICK

◆ WILLIAM MATHESON, of the Fraser Companies, Ltd., Edmundston, has been elected to the directorate of the Bartibog Boom Co.

◆ THE PAYMENT of amounts due to the Fraser Companies for shipments of pulp and paper into the United States, in U. S. funds, has been highly beneficial to the company. There has been the added premium ranging from 14 cents to 26 cents on each dollar received in the United States, largely at New York City.

◆ OWING to uncertainty with regard to the future and overproduction in the past, woods operations in the province were conducted on a much lower scale than usual. As a result logging is practically complete in all sections of the Province and the crews are already coming out of the woods at an almost unprecedented date.

◆ ◆ ◆

◆ Burrows Sloan

Burrows Sloan, chairman of the board of the General Refractories Co., Philadelphia, passed away suddenly February 28, at the age of fifty-five years.

Mr. Sloan entered his business career in 1899, when immediately following his graduation from Princeton he entered the employ of the Reading Company. He later became associated with the Harbison-Walker Refractories Company, and in 1911, with Governor Sproul, he organized the General Refractories Company, being made president of that company in 1925. He has been chairman of the board since the early part of 1931.

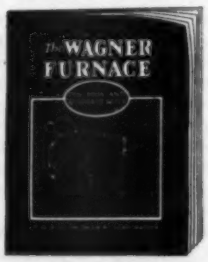
◆ FOOTE Bros. Gear & Machine Co., Chicago, has recently been awarded contracts for furnishing the machined castings, including segmental, break in floor, center lock castings, etc., also the operating machinery for the bridges of the Illinois Waterway at Joliet.

◆ C. F. BLACK, of Ardmore, Pa., formerly sales manager for Penberthy Drying Systems, is now connected with Farnsworth Company and will sell Farnsworth Drying Systems and the other various types of equipment manufactured by that company.

For Pulp Mills Located In Sections Where High Steam Costs Prevail

Such plants, to recognize the economy of operating the Ross Wagner Furnace, need only consider the value of the steam that can be generated from waste heat by this modern recovery method. Replacement of existing equipment is being completely justified from this standpoint alone in prominent plants throughout the industry.

Refer your Recovery Room problems to our engineers. Whether you are ready to make a capital investment for equipment which will pay for itself in less than two years, or only wish to improve your present recovery operation with the smallest possible expenditure, our engineers will be glad to discuss the matter with you. This service is yours for the asking and, of course, without obligation.



Construction and operation of the Ross Wagner Furnace are described, together with tables for figuring recovery room performance, in a 20-page book that will be sent upon request.

J. O. ROSS ENGINEERING CORPORATION

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414 Lewis Building
PORTLAND, ORE.

ROSS ENGINEERING OF CANADA, LIMITED
NEW BIRKS BLDG., MONTREAL

ROSS SYSTEMS
HEATING—VENTILATING—DRYING

Groundwood Production

(Continued from page 1439)

perature of the stock, as many times the flow of stock, due to piling up of slivers and slabs, was diverted from the point of bulb location to other points of the overflow weir. This meant a fairly uniform temperature line, due not to the efficiency of the control methods but to the fact that the bulb was not reacting to actual changes in stock temperature.

Automatic Control of Grinder Temperature

The action of the pulp mill operators in endeavoring to control the temperature of the stock—first, by intermittent readings with an indicating thermometer, and later with continuous records from a recording thermometer, was an indication that the value of uniform temperature in the grinding process was realized and considered an important phase of efficient grinder operation. This lead to the development, by Taylor Instrument Companies' engineers, of the first successful application of automatic grinder temperature control.

The importance of uniformity in grinding temperature has been the subject of various articles in technical and trade magazines published during the past few years. One statement made during 1928 by the chairman of a committee, appointed by a technical association to report on the subject of variables in groundwork manufacture, that "Information of great value would be developed by a study of temperatures during the grinding process if some method of measuring the grinding temperature could be found"—encouraged engineers of the Taylor Instrument Companies to work on the development of such an instrument. After considerable research work covering primarily the proper bulb design and bulb location suitable to various type grinders, and some changes in a standard Tycos temperature recording regulator, a successful application was made several years ago on a Waterous hydraulic type grinder.

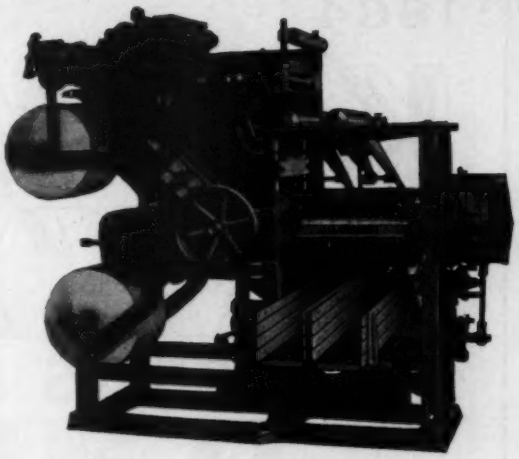
This original instrument installed on three different grinders in the same plant to check its efficiency on different grinders has been in successful operation ever since the day it was originally installed.

Further studies of grinding temperature control have developed the fact that variations in grinding temperature materially affect the freeness, color and tensile strength of groundwood fiber; further that changes in freeness of the stock due to variations in grinding temperature affect the results obtained in processing the stock in the jordans, beaters and screens, and affect the character of its flow under the slice, and the action of the suction boxes, suction rolls and presses in their contact with the sheet.

Stock produced on grinders controlled with the Tycos pulp grinder temperature regulator is noticeably free of coarse or bundled fibers caused by grinding at low temperatures, and objectionable flour or fine pulp produced when grinding at extremely high temperatures. Stock produced at one plant and used for molding in various pulp products has been found to dry more uniformly to a desired shape after the grinders has been equipped with the Tycos system of control. The mill superintendent at this plant also noticed a material increase in the production of the grinders, undoubtedly due to the fact that by controlling the grinding temperature at a definite point the amount of water used is fairly constant and the grinding stone is operating under conditions that are very uniform.

An important item in connection with temperature control in producing groundwood pulp is that uniform temperature eliminates, to a great extent, the normal damage to stones caused by rapid expansion and contraction, as the temperature varies from one extreme to the other when hand control is used. Close control of grinding temperature also materially lengthens the normal life of a natural stone by reducing the number of burring operations. One mill operator has been able to operate a natural stone for 26 hours without reburring it, as compared with 11 hours before the Tycos control was installed.

Control which has been called the most important requisite of a properly co-ordinated organization is nowhere of greater importance than in a pulp mill, as the quality of paper made from the pulp produced in the pulp mill is dependent almost



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Embosses, prints 4 colors, folds and counts in one continuous operation

PRODUCTION COSTS take a tumble when you install this machine. It turns out printed or plain napkins in quarter or eighth folds at a speed of from 400 to 500 per minute. Entirely automatic, twin type, prints to 4 colors on one web or 1 to 2 on each. Cuts to size with a shear cut that you'll like. Our exclusive vacuum type rotary folder insures square accurate folds when operated at high speeds.

Investigate this machine before buying napkin equipment. You'll find its record of performance, low upkeep cost, and little down time remarkable.

Write for complete information.

PAPER CONVERTING MACHINE COMPANY
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Designers and Makers of High Speed Rotary Folders for Napkins, Towels, and Toilet Paper. Rotary Printing Presses for Napkins, Bags, Envelopes, Crepers, Bundling Presses and Special Converting Machinery.

"PAPER CONVERTING"
SPEED ROTARY PRINCIPLE SERVICE

1864 1932

KNOX "EXCELSIOR" WOOLEN COMPANY

FELTS & JACKETS

CAMDEN, MAINE

Excelled by none
X-tra quality
Chosen by leading paper makers
Experience of 68 years
Leading in uniformity of product
Special Felts to meet every condition
Information on felt problems freely given
Originated in 1864
Reduce your felt costs by using

"Excelsior" Felts and Jackets

Manufactured and sold by

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entirely on the quality of the pulp. Poor workmanship can produce poor paper even when using the very highest quality pulp, but the very best workmanship cannot produce good paper if the pulp used is not of good quality.

A Simple, Practical and Reliable Control System

The instruments and application method developed by the Taylor Instrument Companies for controlling wood pulp grinding temperature embody an instrument of great sensitivity and a regulator bulb location that hampers in no way the usual operating activities of the worker. The nature of the control is constant and within the limits of ± 1 deg. Fahr. variation of any predetermined temperature. The control point can be changed at will by the operator and in starting up after a shut down the temperature can be brought up gradually to the operating point. This eliminates the damage due to a rapid increase of stone temperature. The entire system is simple, practical and reliable and is of too great importance to escape the attention of any mill operator who realizes the value of temperature control in this most important process.

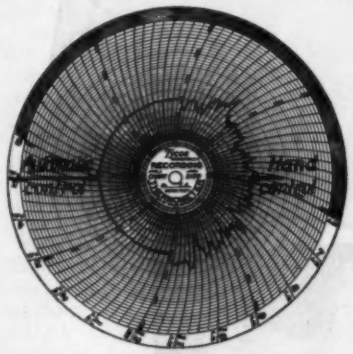


Fig. 1—Magazine Type

It enables the operator to grind the stock at a temperature best suited for a particular purpose, whether for strength or finish. It protects the character of the stock, insures its quality and gives uniformity that is conducive to greater safety in machine operation. At the same time it relieves the operator from the difficult task of controlling the grinding temperature of several grinders by manipulating the hand valves on several shower lines, thus giving him more time for checking the operation of the pumps, governors, filling of the larger type grinders, dressing the stones and the many other duties connected with the successful operation of a groundwood pulp mill.

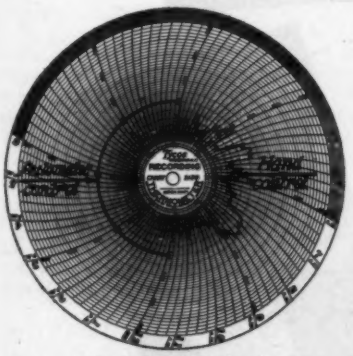


Fig. 2—Pocket Type

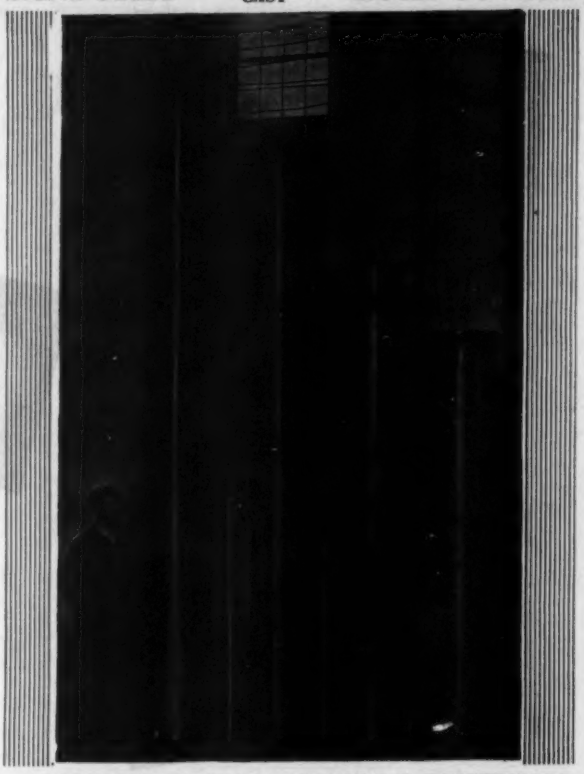
Figure 1 shows a comparison between hand and automatic control on a magazine type grinder; Figure 2 is a chart showing hand and automatic control on a pocket type grinder.

It is believed that these records of actual operations present an accurate picture of the efficiency of the Tycos control system, the benefits due to this control in the manufacture of a high quality groundwood pulp and the possibilities of a successful application on both magazine and pocket type grinders.

This system of automatic temperature control for wood pulp grinders places the regulator bulb or thermal sensitive element where it belongs: where it is adjusted as the stone wears smaller in diameter; where it records and controls accurately and continuously, yet is protected from damage, without interfering in any way with the operation of the grinder. The installation is fully covered by U. S. Patent No. 1806238 and Canadian Patents Nos. 254887 and 331574.

The Taylor Instrument Companies feel that the development of this application is a worth while contribution to the art of papermaking. Installations are now being made on grinders of various sizes and types.

SANDUSKY CENTRIFUGALLY CAST ROLL COVERS



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Bronze · Brass · Copper · Monel · Aluminum

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BY MEN
WHO KNOW!!

SANDUSKY Roll Shells and Roll Covers are used in most paper mills. Year after year their smooth, even surfaces aid in rolling out over 80% of the nation's paper.

THERE is a reason.

MEN who know---men who make comparisons---men who study performance records---physical tests---repairs and costs---these men, and there are a lot of them, are using Sandusky Products for new rolls and replacements.

ARE YOU in this group?

Made only by

THE
PAPER & TEXTILE MACHINERY CO.
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Also Manufacturing

SANDUSKY SHOWERS
"First Used---Best Yet"

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What a variety from one source

Bulk Paper Napkins, all sizes and folds, plain, tinted, printed, semi-crepe, full crepe, embossed ❦ packaged napkins in cellophane, glassine and cartons ❦ table and tray covers ❦ luncheon and bridge sets ❦ toilet paper ❦ Kover Kleen toilet seat covers ❦ oyster and food pails ❦ ice cream pails ❦ white lined and all white round cans, plain and printed ❦ Waxtex household waxed paper ❦ Food Shop delicatessen paper, wall pockets, rolls, bulk ❦ ice cream can liners ❦ stock bread wrappers ❦ Parchtex butcher paper ❦ all standard grades waxed papers ❦ bulk and packaged paper plates ❦ egg cartons ❦ white lined butter and food dishes nested.

Each a leader in its field

THE MENASHA PRODUCTS CO., Menasha, Wis.
Division of THE MARATHON PAPER MILLS COMPANY
Mills at - Menasha, Wausau, Rothschild, Ashland, Wisconsin

NEW ENGLAND

◆ Paper Companies Make Good Showing

In view of the state of business in 1931, the financial statements of several leading New England paper companies submitted during the past few weeks are a tribute to conservative New England management. Outstanding in these statements are those of the Great Northern Paper Co., Millinocket, Me., whose financial position today is actually stronger than a year ago; Eastern Manufacturing Company, Oxford Paper Co., and S. D. Warren Company.

Great Northern declared a quarterly dividend of 60 cents per share, payable March 1, placing the stock on a $2.40 annual basis, against $3.00 heretofore. However, this was proper caution in view of the newsprint market. As a matter of fact, their ratio of quick assets to current liabilities is almost 30 to 1, nearly one-third better than the ratio at the same time a year ago, when the ratio was about 20 to 1. Furthermore, the company increases its cash and quickly marketable securities from $2,426,155 as of January 1, 1931, to $3,159,050 as of January 1, 1932.

Despite the fact that Eastern Manufacturing Company, Bangor, Me., experienced a deficit for 1931, the company made considerable progress in the improvement of its financial structure and entered 1932 in a better position than ever. After all charges, there was a net loss of $127,511, but in the meantime the company had accomplished the following: Bank loans were reduced by $228,000, bonds were retired in the amount of $302,400 and mortgage notes were reduced by $16,734. In addition, some $240,000 was paid to the Federal Government in settlement of back taxes. Trade accounts payable were reduced and are being paid on a discount basis at the present time. Certainly an impressive record for a year like 1931. Balance sheet shows quick assets of $3,234,124 and liabilities of $1,713,830.

The year 1931 was probably as bad a year for manufacturers of book papers, both coated and uncoated, as any in twenty years, yet S. D. Warren Company, Cumberland Mills, Me., report net loss of only $159,730 after all charges. It compared with a net profit of $616,150 for the year 1930. Net sales were off 28 per cent to $6,896,000. Current assets totaled $3,292,524 at the end of 1931 and current liabilities $867,328. The company reported that its 1931 operations were at 63 per cent of capacity as compared to 80 per cent of capacity in 1930. The company, moreover, ascribes a considerable part of its 1931 reduction in earnings to the fact that it has completely made over its lines, bringing out new and better quality papers at lower prices.

◆ THE LOW PRICES at which fuel oil for power plants is selling along the Atlantic seaboard, 60 cents per barrel at the present time to large users, has aroused much interest among New England papermakers. Many of them are so equipped that they can burn either oil or coal, but there have been few who have decided that it is inadvisable to make the expenditures necessary for new equipment, including storage tanks if they cannot secure long-term contracts. One of the largest wrapping papermakers in New England recently came to this decision.

◆ ALONG the lines of present market conditions, there has been a steady production of new paper for the past eight months in the fine paper district of western Massachusetts, designed primarily to meet the demand for lower prices. The latest in this series are Broadcaster Text and Highway Cover, two lines with a variety of attractive colors, offered by Strathmore Paper Company, at a very moderate cost to conform to the modern trend.

◆ E. J. McDONNELL, general manager of the Groveton Paper Co., Groveton, N. H., addressed the Paper Committee of the New England Purchasing Agents' Association at its February meeting on the general subject of papermaking and its modern trends. The question of moisture determination, standardization of pulp, and the weighty subject of selling paper and keeping it sold, in other words, keeping the specifications of printers for specific uses.

Don't forget that

ONE VIM DOUBLE BELT will outlast any 3 singles

For many years, Houghton has been emphasizing the fact that there's real economy in the use, wherever possible, of Double Belts instead of Singles.

Again and again, in actual service on a given drive, a Double VIM Flat Leather Belt has outlasted three singles and, at the same time, has transmitted more power at lower cost. Remember, too, that the far greater pliability of VIM mineral-tanned leather means that VIM Doubles can be used on much smaller-sized pulleys than oak-tanned leather doubles can.

Ask the Houghton Man to check your drives and let you know where VIM Doubles can replace Singles and give you greater efficiency with far longer service.

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FOR installations demanding long, dependable service, Powell Valves have won the confidence of engineers everywhere.

They are designed and built for controlling water, air, steam, oil and gas. The metals that go into them are tested for purity and strength. All parts are sufficiently heavy, especially at the points where strain and wear are greatest. All wearing parts are renewable.

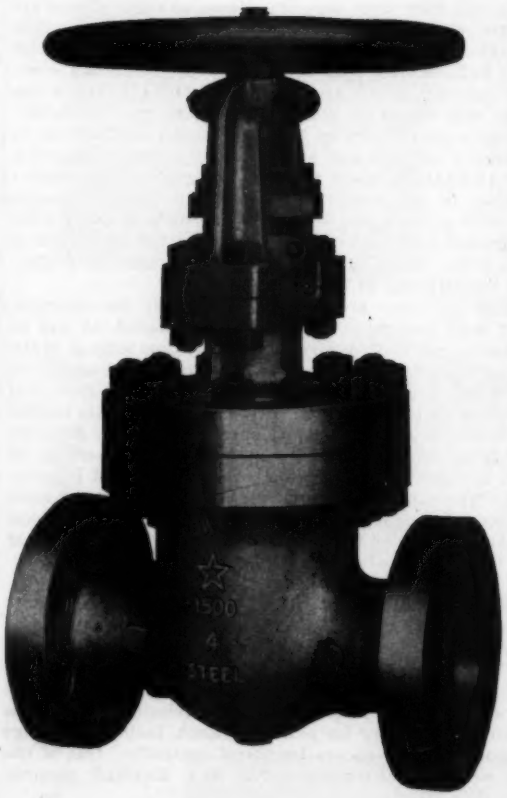

FIG. 1383
CAST STEEL O. S. Y. GATE VALVE
FOR 1500 POUNDS W. S. P.

THE WM. POWELL CO.
2321-31 Spring Grove Ave. Cincinnati, Ohio

Engineering & Export Dept.
50 Church St. Room 260
New York, N. Y.

Chicago Office
E. F. Smith, Dist. Mgr.
400 N. Michigan Ave.

POWELL VALVES

◆ **Rate Changes**

A number of important changes in freight rates, practically all of which are reductions, have been docketed during the past month by the New England Freight Association. Perhaps the most important is the reduction proposed in the rate on paper from Cumberland Mills, Me. (S. D. Warren Co.), to Boston. The present rate is 17 cents per 100 pounds, the proposed rate is 13.50 cents. Motor truck competition is given as the reason.

The rate on paperboard from Bradford, Mass. (Robert Gair Co.), to Boston is reduced from 7.50 cents per 100 pounds to 7 cents. This applies also to a number of cities adjacent to Boston. The rate on waste paper from Boston and the aforementioned adjacent cities to Bradford is also reduced from 9 to 8 cents per 100 pounds.

Rate on wrapping paper from Ashuelot, N. H., and Baldwinsville, Mass., to Boston, present 17 cents and 15 cents respectively, propose 13.50 cents and 12 cents, due to truck competition.

The New Haven R. R. will allow 50 cents per ton for the loading of wood pulp from piers to cars at New London, Conn., providing they get a line haul from the traffic and providing the pulp has arrived via coastwise or foreign vessels.

New England papermakers whose production includes bristol board are much aroused by a proposal of the southern railroads to raise the classification of bristol boards to the ratings applying on printing paper. Recent shipments of bristol board to southern destinations from New England mills at freight rates apply to paperboard generally have been severely criticised by inspectors for southern lines. The latter have appealed to the Official Classification Committee for an investigation of the matter. Papermakers will resist this attempt on the grounds that the dividing line between bristols and other boards is often a very shifting one, certainly not to be entrusted to a layman.

Papermakers and china clay importers are also disturbed at a railroad proposal understood to be before the Interstate Commerce Commission at this time providing for an increase in the 6 cents per net ton surcharge on china clay to 1 cent per 100 pounds or 20 cents per net ton. As an offset to this, papermakers propose to truck clay from New England ports, contending that at present prices there is no justification for any advance. A hearing will be demanded if the change is allowed.

◆ HENRY C. DAVIS, president of the Davis Paper Co., paperboard manufacturers of West Hopkinton, N. H., died last month at the age of 83 years. Mr. Davis was a pioneer in the use of steam for drying of paperboard. He built his first mill at Davisville, N. Y., for making strawboard, which was later sold to the United Paper Board Co. He is survived by two sons, Nathaniel F. and Russell.

◆ ALFRED J. WHITE, treasurer and general manager of Bicknell & Fuller Paper Box Company, of Boston, important producers of paper containers, died suddenly February 13th at Winchester, Mass. He is survived by his wife and four children.

◆ MAINE mills are reported to be offered peeled wood at $8-$10 per cord delivered their plants. Practically no Russian wood is being purchased at this time. Leading papermakers state that it cannot be purchased at a price competitive with domestic wood.

◆ OXFORD Paper Company deferred its preferred dividend, due March 1, because of general business conditions. Yet the company has done well; the dividend was proportionately earned for the first two months of the year. The company felt that the best interests of stockholders demanded it be withheld in order to conserve cash until conditions could be more accurately forecast, according to President Hugh J. Chisholm. The company's common dividend was paid until late in 1931.

◆ PAPERCRAFTERS, Public School Division, Inc., of Holyoke is a new company chartered to do business in paper in all its forms, to manufacture, convert, print, emboss,

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When something breaks . . . and steel is needed in a hurry . . . you can depend upon Ryerson for quick action. Complete stocks of all steel products, including:

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Shapes	Chain	Tool Steel
Structurals	Turnbuckles	Bar Iron
Rails	Shafting	Refined Iron
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Sheets	Boiler Fittings	Safety Treads
Rivets	Corrugated Sheets	Small Tools
Bolts	Concrete Reinforcing	Machinery
Nails	Welding Rods	

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PHILADELPHIA QUARTZ CO.
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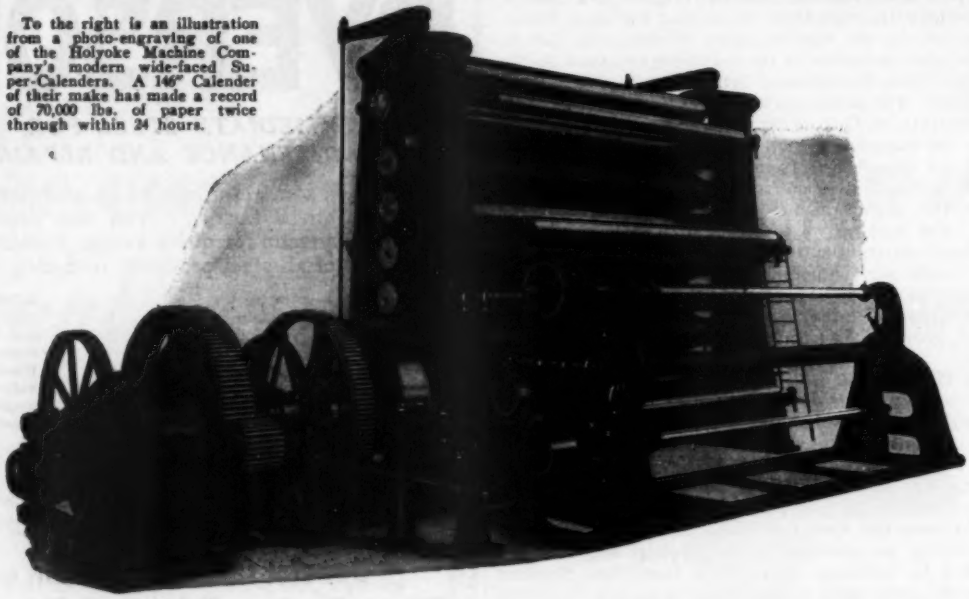
Chicago Office: 205 W. WACKER DRIVE

To the right is an illustration from a photo-engraving of one of the Holyoke Machine Company's modern wide-faced Super-Calenders. A 146" Calender of their make has made a record of 70,000 lbs. of paper twice through within 24 hours.



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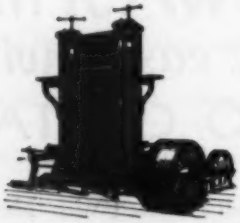
By HOLYOKE



Since 1863

The print above is from a larger original wood cut of a HOLYOKE 36" Web Calender installed over fifty years ago. Constant improvements in stride with the times, plus high and unwavering standard of high quality, account for the LEADERSHIP of HOLYOKE.

Superior Engineering Skill is part of the design and construction of every HOLYOKE machine. So much so, that while different installations may resemble one another in type, yet each machine is "Built-to-Order" in a very real sense. Special details, changes, and improvements are carefully included to meet the exact requirements of local conditions. When planning on new equipment or replacements write HOLYOKE Engineers, HOLYOKE Machine Co., HOLYOKE, Mass.

Manufacturers of Super-Calenders, Platers, Cotton and Paper Rolls, Washing and Beating Engines, Wood Pulp Grinders, Barkers, Chippers, Rag and Paper Dusters, Rag Cutters, Hydraulic Pumps and Presses, Hercules Water Wheels and Governors.

The HOLYOKE MACHINE COMPANY

FOUNDED 1863

stamp, rule, etc., and particularly to conduct a sales organization for the sale of paper to schools as well as to commercial organizations. Their capital is $90,000. John M. Reynolds of Longmeadow, Mass., is president, and Wellington S. Reynolds, of South Hadley, is treasurer.

◆ TWO New England paper box manufacturers are operating at capacity supplying paper containers for the producers of the new "Shu-re-nu" for renewing colors on shoes. It is a new product and its quick acceptance by the trade has caused capacity operations of its own plant and the supply companies.

◆ Bird Suggestion Plan Helps During Depression

An interesting idea of President Philip R. Allen, of Bird & Son, East Walpole, Mass., concerning that company's success in maintaining operations through the depression is his statement that he believes it has been due in part to the fact that it is receiving suggestions constantly from employees which are valuable in reducing expenses, introducing new products and providing new ideas in manufacturing.

His statement was made on the occasion of the annual grand prize awards to the six men who have supplied best suggestions during the year. These are in addition to the monthly awards. In the latter case, all accepted ideas are rewarded by $10 or $5 each, and there were about 30 of these received during January and accepted. The best of these receive the grand prizes which started with $150 at the end of the year. The plan has been in operation for many years and has been highly successful. Mr. Allen invites suggestions now on the ground that they were never more needed than during these times.

◆ FOURTEEN steamers from the Baltic with cargoes of baled woodpulp arrived at Portland, Me., during February, the largest month in 13 preceding 30-day periods, with a total of nearly 30,000 tons of pulp unloaded at the Maine port. Two other papermaking commodities rose in February arrivals, sulphur with 3,300 tons and china clay with 8,478 tons.

◆ REPORT is current here to the effect that Ralph Snell is interested in the formation of the Huntington Paper Co., papers of incorporation for which were recently filed in this state. The new company utilize the old American Writing Paper Company mill at Huntington, Mass. The incorporators of the new Company are H. M. Freeman, F. E. Button and J. P. Brassil, all of Holyoke.

◆ ON MARCH 1 Allied Paper Mills announced that John A. Andrew, 10 High St., Boston, has been appointed exclusive New England agent for their papers. Mr. Andrew has discontinued his former connection with the Mill Sales Department of Whitney Anderson Paper Co., Springfield, Mass.

◆ THE SMITH & WINCHESTER CO., South Windham, Conn., has just shipped the eleventh S & W machine to the Hammond Bag & Paper Co., Wellsburg, W. Va. These machines turn out bottoms for paper bags at the rate of 3,000 an hour.

◆ WILSON D. ROGERS, who until recently was with the S. D. Warren Company, has become associated with the Oxford Paper Company and Oxford-Miami Paper Company, with headquarters in Chicago and Cleveland.

◆ WILLIAM B. McEACHERN has become a member of the Chicago district sales personnel of The Northwest Paper Company, Cloquet, Minn. Mr. McEachern was formerly connected with the W. A. Johns Paper Company, Chicago, and with the International Paper Co.

❖ ❖ ❖

◆ THE MARCH meetings of the Paperboard Industries Association and its committees will be held at the Commodore Hotel, New York. Committee meetings will be held March 22, Group meetings March 23 and a general session March 24.

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We venture that you pay mighty close attention to the B.T.U. in the coal you buy, the grade of oil you use for lubrication, or the rate you pay for power—and why shouldn't you?

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PAPER AND PULP MILL CATALOGUE

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WISCONSIN

◆ Thilmany to Have New Bag Plant

The Thilmany Pulp & Paper Co. is taking the last step in centralization of all manufacturing at its main mills at Kaukauna, Wis., by moving its large bag mill there from Waukegan, Ill., after about ten years of operation at that city. The final unit of its building and expansion is to be the erection of a bag plant 135 by 200 feet, with floor space of 27,000 square feet. The contract has been awarded to the Permanent Construction Co., Milwaukee, Wis., and work already has been started. The building is to be completed June 1st and the company hopes to have its bag mill moved and ready for operation July 1st. About $100,000 will be spent for the construction and moving.

Work is about completed on the moving of machines No. 6 and 7 from the tissue branch at Appleton, Wis., into an addition to the pulp mill 60 by 170 feet in size. Installation will be completed soon also of machine No. 8, a new Fourdrinier housed in a new building 45 by 250 feet in size. The company is now occupying a new warehouse 80 by 218 feet, in which new offices are located. The old offices will be used for the engineering department.

With these changes completed, the company will have in operation a sulphate mill, eight paper machines and conversion departments for waxing, printing, asphalting and bag making. There will be 35 bag machines and 5 printing presses in the bag mill.

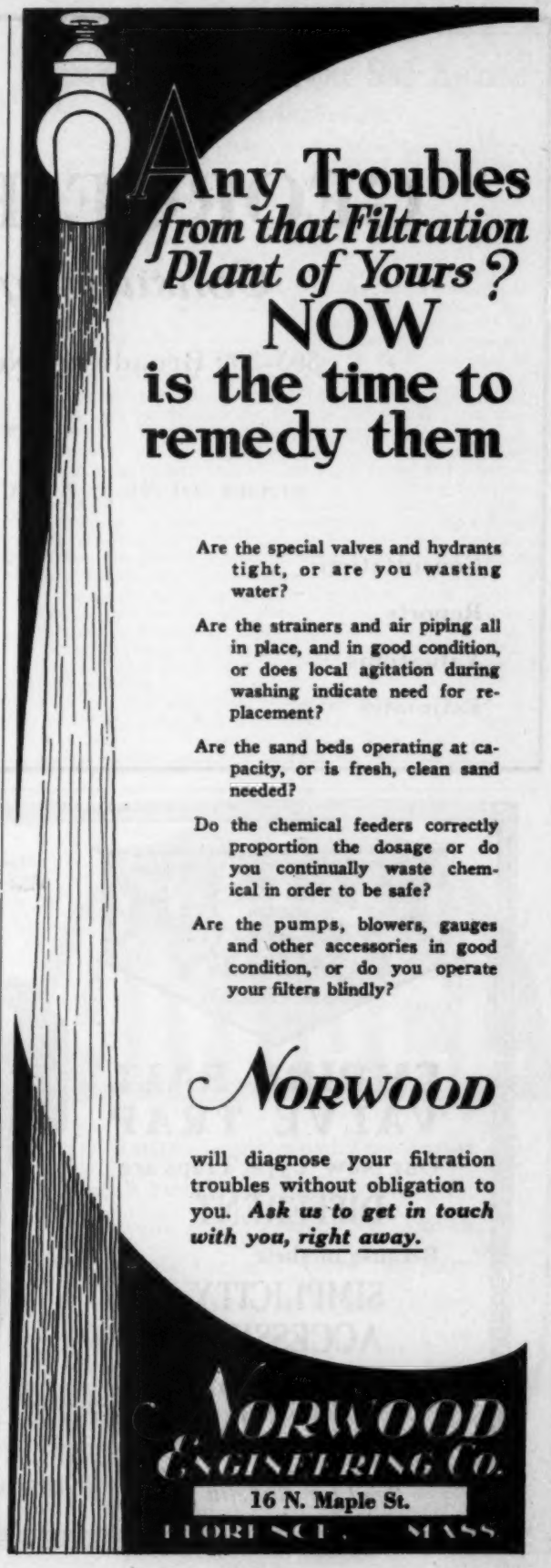
◆ A New Waterproof Paper Plant

A new concern, the Syl-Mac Paper Products Co., capitalized at $20,000, has made its appearance at Merrill, with Sylvester H. Killishek and John A. McDonald, former residents of Neenah, as the principal owners and operators. They will manufacture, under the trade-mark "Macsylite," a line of sanitary, washable, waterproof paper coverings for tables and shelves, floor coverings said to be more durable than linoleum, and washable wall paper. An innovation in price tags also is contemplated.

Waterproofing will be accomplished by a special formula accidentally discovered by Mr. Killishek while attempting to make steam-resistant gaskets for heating pipes at a hospital at Neenah. The fluid applied as a film of one ten-thousandth of an inch will not penetrate paper but successfully resists boiling water, acids and chemicals. Paint pigment will be used for coloring effects. All of the machinery was made at Merrill for the plant located in an old school building. Paper will be purchased from manufacturers at Neenah. About 20 employees are at work now and another plant is contemplated for the floor coverings, with 20 more employees. Sales agents will be R. E. Sanders and F. H. Zahrt, of Neenah. A line of samples already has been made up, including bond letterheads treated with the formula.

◆ EARNINGS of the Kimberly-Clark Corporation, Neenah, for the year 1931 are about half of the 1930 total. The company's statement shows $1,164,000, equivalent to $2.33 a share on common stock, as compared with $2,493,000, or $4.98 a share in 1930. Despite a liquid position of about five to one, the company is reducing its April 1st dividend from 62½ cents to 31¼ cents, in order to conserve its cash position and provide for expansion this year. A dividend of $1.50 was declared for the quarter on preferred stock.

◆ WISCONSIN paper and pulp mills were fortunate to be exempted by the Wisconsin Public Service commission from increased freight rates for shipments within the State of Wisconsin of pulpwood and dock coal. When figures were presented showing 50 to 75 per cent of the pulpwood shipped by farmers, the rate was not increased because of the burden it might place on them. Coal rates already had been in-


Any Troubles
from that Filtration
Plant of Yours?
NOW
is the time to
remedy them
Are the special valves and hydrants tight, or are you wasting water?
Are the strainers and air piping all in place, and in good condition, or does local agitation during washing indicate need for replacement?
Are the sand beds operating at capacity, or is fresh, clean sand needed?
Do the chemical feeders correctly proportion the dosage or do you continually waste chemical in order to be safe?
Are the pumps, blowers, gauges and other accessories in good condition, or do you operate your filters blindly?
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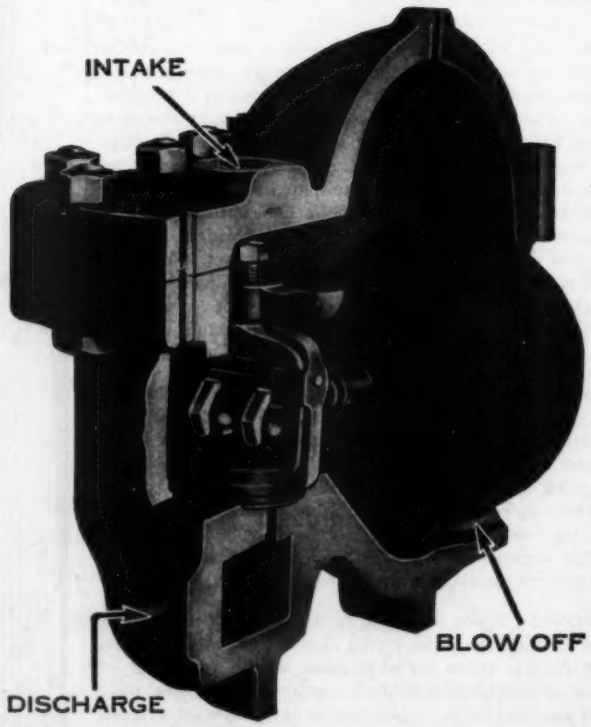

creased and the mills pointed out another raise would work injustice. The mills also are seeking a reduction of freight rates on bituminous coal transported into Wisconsin, claiming they are discriminatory.

◆ Nepco Forests Increased

Another addition has been made to the commercial forests of the Nekoosa-Edwards Paper Co., Nekoosa, with the purchase of 1,480 acres of cut-over land in Wood county. Norway, jack and white pine will be planted for the company's two kraft mills. The nurseries now inventory 6,300,000 trees, and by the end of this year the company expects to have 10,000 acres planted, according to F. G. Kilp, company forester. The supply eventually will be sufficient for all company needs.

Fire protection will be given these tracts by the Wisconsin Conservation Commission, which will have 50 men at work soon cutting fire lanes through merchantable timber tracts in Wood county. The commission also is planning to add 29 steel watch towers, making a total of 103 in use in northern Wisconsin forests. Patrol districts have been re-arranged so there are four instead of eleven, thus affording better supervision. About $200,000 will be spent on fire lanes, partly as a means of alleviating unemployment.

◆ EVIDENCE of expansion, even in a time of depression, is shown at the Menasha Products Co., Menasha, the carton division of Marathon Paper Mills Co. The company increased its employed force from 698 to 769 during 1931, a gain of approximately ten per cent. By economies, wage and salary adjustments and increased sales efforts, the company has a larger production than ever before and experienced a good year.

◆ MENASHA Mill Supply Co., a new corporation, has purchased the Allen Waste Paper Co., Menasha, Wis., a large buyer and assorter of waste paper for Fox River Valley mills. Fred Rosenthal continues as manager. The company is affiliated with U. S. Paper Supply Co., Chicago; Kansas City Waste Paper Co., Kansas City, Mo., and Des Moines Waste Paper Co., Des Moines, Iowa.

◆ THE WISCONSIN Public Service Commission has under advisement the application of the Consolidated Water Power & Paper Co., to raise the level of its dam at Stevens Point, on the Wisconsin river, two feet. About $100,000 was spent on construction work last summer to make the higher level possible without flood damage. Hundreds of farmers, city, town and village officials appeared at a hearing conducted at Stevens Point recently and were practically unanimous in their insistence that the permit be denied. They contended their lands were in great danger of flooding at high water periods but company officials were prepared to show this was not the case and that most of the affected owners had been consulted beforehand.

◆ MILWAUKEE has had an outstanding safety school this winter, with an enrollment of 6,000 and such a large attendance the Milwaukee auditorium had to be used. A paper section has been conducted for the benefit of those engaged in this industry. One of the principal addresses to these men was made recently by M. G. Hoyman, safety director of the Kimberly-Clark Corporation, Neenah, Wis. He told the Milwaukee men how his company's pioneering and success in safety have been accomplished.

◆ IN ORDER to be nearer the source of paper supply, the American Lakes Paper Co., Waukegan, Ill., is moving its plant to Milwaukee, Wis. The concern manufactures bags and is employing 75 men at present, about half the normal force. The change is expected to be made immediately.

◆ PAPER MANUFACTURERS are prominent in the drive made by the U. S. government to sell "baby" bonds and stop hoarding of money. F. J. Sensenbrenner, president of the Kimberly-Clark Corporation, Neenah, is the Wisconsin chairman. Others chosen as local assistants are: J. M. Conway, Hoberg Paper & Fibre Co., Green Bay; John Alexander, Nekoosa-Edwards Paper Co., Nekoosa; E. H. Neese, Beloit Iron Works, Beloit; D. K. Brown, Neenah Paper Co., Neenah; Ben Alexander, Wausau; E. A. Oberweiser, Whiting-Plover

Apmew High Speed Paper Stuff Hydrator

(Patents Applied For)

During the last two years, the American Paper Machinery And Engineering Works have completed the development of their New Economical Hydrator, and are now getting into production on this machine.

APMEW Hydrator is entirely a new departure in Paper Making Machinery and its outstanding features can be plainly seen by paper makers. In it are combined the scientific principles of the Beater, the Jordan, the Ball Mill, the Rod Mill, the Centrifugal Separator, and the Pump. It is designed to combine the work of beater, jordan, and pump into one complete economical unit. It has capacity up to 75 tons daily on some kinds of paper stuff, it consumes less than 40 horse power, and it can be direct connected to standard motors, or it can be belt driven.

The principal object of this Hydrator is to produce better paper and to economically hydrate paper stuff more uniformly and to greater degree than present machines.

Another object is to provide a hydrator which causes the stock to go inward against centrifugal force, and outward with centrifugal force, thereby in a series, alternately placing the stock under pressure and vacuum to separate the fibre bundles into single fibres, to spread size and clay thoroughly on each fibre and to thoroughly hydrate the stuff. Another object is to provide a hydrator which rolls the fibre bundles into single fibres without cutting them into short pieces.

Another object is to provide a hydrator which centrifugally separates the dirt and grinds it into fine particles as paint is ground, producing particles so small that they are unnoticeable in the paper; or particles so small that they can be easily washed out of the pulp or easily bleached from the pulp.

With these and other beneficial objects included in APMEW Hydrator; it is manufactured by American Paper Machinery And Engineering Works, Glens Falls, N. Y. Complete information will be furnished upon request.

AMIJEL

AMIJEL is not an ordinary beater starch—it is a specially processed, pure gelatinized starch—ready for use. Does not have to be cooked. Just add in dry form to the beater.

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Part I contains the first twelve lessons and two separate articles—A Problem in Head Box Control and The Degree of Hydration. Price 50c.

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A 48-page pamphlet made up of practical helps, many of which have meant considerable savings in paper and pulp mills. Of tremendous value to the practical man. Price 50c.

THE PAPER INDUSTRY

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Paper Co., Stevens Point; Karl Stansbury, Thilmany Pulp & Paper Co., Kaukauna; Guy Waldo, Flambeau Paper Co., Park Falls, and E. B. Redford, Consolidated Water Power & Paper Co., Wisconsin Rapids.

◆ THE MINNESOTA Arrowhead association, a civic and commercial promotion body, is giving its assistance to pulp manufacturers in obtaining a protective tariff on foreign imports of pulpwood, to equalize the disadvantage suffered by local manufacturers on account of the depreciation of foreign currency through abandonment of the gold standard. The association's particular purpose is to protect the farmers who make part of their living cutting pulpwood for the mills.

◆ THREE fatal accidents within the last six months have marred an excellent safety record of twenty years at the Thilmany Pulp & Paper Co., Kaukauna, where there had been no fatalities during all that time. The last of these was the death of George Reyba, a foreman who passed away recently from injuries sustained while repairing a conveyor.

◆ JAMES C. KIMBERLY, vice president of the Kimberly-Clark Corporation, and president of the Neenah Paper Co., is moving his residence from Neenah, Wis., to Washington, D. C. He received statewide newspaper notoriety when he announced as his reason the "soaking" of the rich with income taxes in Wisconsin. Mr. Kimberly paid an income tax for 1931 on an income of $312,936. His taxes would have been doubled for the next two years under a law passed by the legislature levying a $7,000,000 relief fund.

◆ GEORGE W. MEAD, president of the Consolidated Water Power & Paper Co., Wisconsin Rapids, Wis., has retired from local politics. He was mayor of his city for the last six years and has declined to serve another term.

◆ MRS. W. L. DAVIS, wife of the president of the Dells Pulp & Paper Co., Eau Claire, passed away recently, shortly after the celebration of their golden wedding anniversary.

◆ THE MENASHA Paper Corporation, Menasha, which last year acquired the plant of the Menasha Paper Mills, has resumed operations after being shut down for about ten weeks. A curtailed schedule will be in effect but a five-day week is contemplated soon. The mill was recently remodeled and has two machines making straw board.

MICHIGAN

◆ Jenkins Brothers Entertain Chief Engineers

On the evening of February 25th, the Jenkins Brothers Valve Co. invited the entire membership of the Chief Engineers Club of Kalamazoo to be their guests at a dinner party staged at the Columbia Hotel.

Thirty-five engineers responded to the invitation, and after the sumptuous dinner listened to a very instructive talk on Valves by F. C. Ernst, chief engineer of the Jenkins Brothers Company.

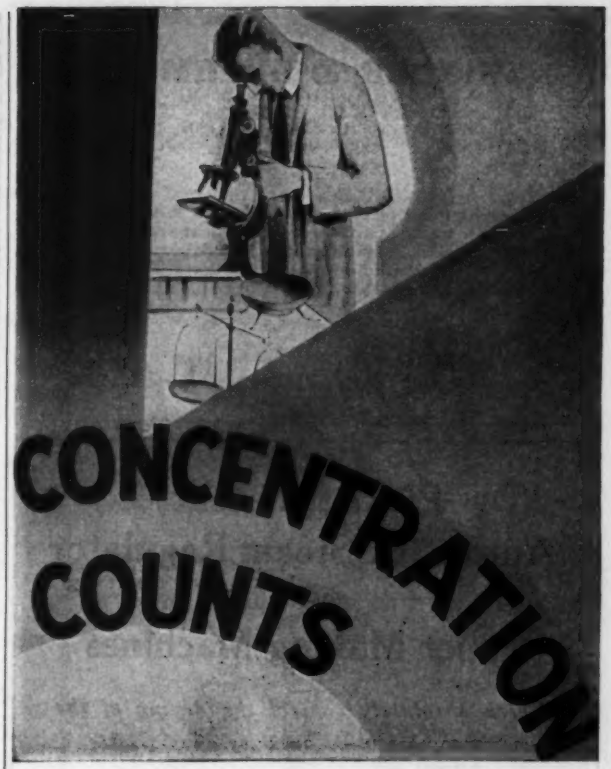
In addition to his talk, which was very general as to valves, Mr. Ernst went further to state a few points in which Jenkins' valves differ from the general run. In the making of castings for the valves, no scrap metal is used. All metal used is new stock and is tested carefully before going into production. By this care, the number of defective castings is reduced to one-third of one per cent.

Besides great care in manufacture of their valves, the Jenkins Brothers Company is careful in its selling by making it a point to investigate the use to which the valve is to be put and recommend the proper valve for the job.

Jenkins Brothers Company representatives present were: R. B. Osgood, Chicago branch manager; K. H. Gates, Michigan representative and Clarence Pountain, Kalamazoo, who made the arrangements for the meeting.

◆ Cost and Technical Association

Harold Allen, vice president of the First National Bank and Trust Co., of Kalamazoo, was the first speaker at the



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February meeting of the Cost and Technical Association in Kalamazoo. Mr. Allen spoke on "International Debt," a subject which proved of great interest to those present and evoked a number of questions.

"Pigments used for Coating Work" was the subject of the second speaker, O. F. Lane of the Krebs Pigment and Color Corporation. There were a number of coating men present and the subject developed considerable discussion which proved valuable to many present.

Due to differences of opinion, it was deemed advisable to take another vote on the question as to whether the Interstate meetings, which have been sponsored in the Kalamazoo Valley, should be held this year.

Those present were overwhelmingly in favor of holding the meeting and the committee was instructed to proceed.

◆ Superintendents Discuss Paper Machine Hoods

The Michigan Division of the Superintendents Association met at the Columbia Hotel on the evening of February 18, and after a satisfying repast listened to Homer Brundage discuss the subject of Paper Machine Hoods.

Mr. Brundage is president of the Brundage Company, which has for many years catered to sheet metal work in the paper mills in and around Kalamazoo and built a number of hoods. Mr. Brundage has made a very thorough study of ventilation and therefore was able to give a very instructive talk on the subject.

Needless to say, the discussion not only covered hoods, but went into the ventilating problems of the paper mill quite generally and proved very interesting as well as instructive.

◆ W. K. Kidder Moves to Bryant Paper Co.

W. Kent Kidder, who has been on the technical staff of the Allied Paper Mills since his graduation from the University of Michigan in 1925, has resigned to accept a position with the Bryant Paper Company.

Mr. Kidder in the six years that he has been with the Allied has worked up from laboratory assistant to head of the laboratory, and for the past year has had charge of technical operation in the mill.

In the Bryant Paper Company his duties will be largely in the coating division where he will supervise technical operation and work with the superintendent to increase efficiency throughout the mill.

At the present writing, the vacancy made by Mr. Kidder's resignation from the Allied has not been filled.

❖ ❖ ❖

◆ Paper Salesmen Make New Connection

The Marquette Paper Company, Chicago, announces the affiliation of new stockholders and representatives as follows: W. P. Andrews, Adolph E. Bauer, Joseph W. French, W. C. Meinhardt and John W. Tomassene.

All of these men have been connected with the Whitaker Paper Company, Chicago, and prior to that were associated together for a period of twelve to fifteen years in the sales organization of the Seaman Paper Company, Chicago.

The Marquette Company does an extensive business as agent for paper mills.

❖ ❖ ❖

◆ Tympan Paper Manufacturer to Expand

Work is under construction for a large addition to the plant of the Cromwell Paper Company, located in the Central Manufacturing District, Chicago. The new building will be a one-story structure, of pressed brick and terra cotta trim, and will provide 40,000 additional square feet of floor space.

The Cromwell company is one of the largest manufacturers of Tympan paper used by printers. Other products are shipping bags to enclose fine furniture and other large objects for shipping, and waterproof bags to keep out moisture and salt air for the protection of merchandise being exported.

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THE SORG PAPER CO., OGLESBY MILL
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TECHNICAL DEVELOPMENTS

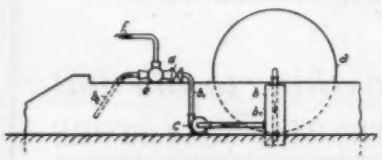
IN THE PAPER INDUSTRY ■ DOMESTIC AND FOREIGN

The following abstracts are of the latest developments found in the foreign press and in the patent offices. Photostats and translations of complete articles and patents can be obtained at cost price.

◆ Bleaching with the Aid of Chlorine

A general review is given of the progress that has been made in staged bleaching. The literature on the subject is reviewed. The article is, however, mainly concerned with a process and apparatus for bleaching with the aid of chlorine gas in a bleaching beater of special construction so that chlorine gas does not escape therefrom and cause the troubles that generally accompany operations in which the gas is used. It is also reported that the process is quicker and that the consumption of bleaching agent is less and at the same time there is less injury done to the pulp that is being bleached. The costs are, therefore, much less.

The apparatus is of the kind that can be affixed to any beater. The process consists in the regulated addition of definite quantities of liquor in a continuous manner to the bleaching beater through the washing drum, while the chlorine gas is also added under regulated conditions through an injector under pressure. There is no increase in the liquid content of the beater during the operation. The apparatus consists of the usual bleaching beater provided



with a washing drum. There is also a circulating pump and an injector as well as the necessary pipe connections.

A type of apparatus is seen in the accompanying illustration. The beater is provided with the slowly revolving washing drum (a), which is supported on the vertical bearings shown. The shaft of the drum is hollow which allows the admission of liquid therethrough. The connections for the liquid are shown at (b) and (b_1) which lead to the pump (c). The liquid is thus removed from the washing drum (a), passed through the connecting pipes and the pump (c) and returned to the trough of the beater through the pipe (b_2). An injector (e) is inserted in the line after the check valve (d). Chlorine gas is fed to this injector through the pipe (f).

Examples are given of the operating results which were obtained with this arrangement. Comparisons are made with other staged bleaching processes as well as with the single stage bleaching process. Roland Runkel. Der Papierfabrikant, 1931, pages 830 to 833.

◆ Composition of Waste Gases From Sulphite Digester

Experiments were made on a sulphite digester from which a total of 0.56 liter of condensate was obtained from the waste gases out of a total of 5000 liters of condensate in all. The condensate was cooled down to 10 degrees C. Gases, which were not condensed, were introduced into the potassium hydroxide solution. The absorbed gases were 5.82 liters of carbon dioxide and 68.7 liters of sulphur dioxide. The non-absorbed gases amounted to 0.9 liter, consisting of 2.1 per cent of carbon dioxide plus sulphur dioxide and 19 per cent of oxygen. The authors also found that cymol is formed during the digestion process by the dehydrogenation of terpene from wood. H. Bergstroem and C. Cederqvist. Ing. Vet. Akad. number 2, 1931.

◆ Analytical Methods in Paper and Pulp Mills

This is a report by a commission of chemists and paper technologists to determine the shortcomings of methods now in use for the analytical determinations on pulp and paper and to establish standard methods in their place. It discussed the subjects of comparative determinations of the degree of digestion or disintegration of pulp by the methods now in technical use. It was found that an improvement in the analytical results would be obtained by more careful treatment of scientifically selected samples, by increasing the wetability of the samples with the aid of wetting agents, such as turkey red oil, and finally by the exclusion of light and qualitative testing for abnormal metal and metallic oxide content, such as iron, copper, copper oxide, bronze, etc.

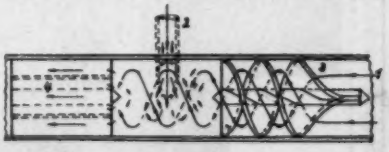
Another subject was the distribution of rosin, ash and reducing substance in chemical pulp. It was pointed out that a most important matter in these determinations was the carefulness with which the sample was selected. The disintegration of the sample and the production of very thin test sheets from it, after treatment in an experimental beater, are also highly important in the analysis.

Tests were also made on the determination of rosin and fatty substances in chemical pulp in accordance with the emulsification method. The use of ammonia and sodium hydroxide in these analyses was considered. Ammonia is approved for this purpose. A five per cent ammonia solution extracted up to 70 to 86 per cent of the rosin in the pulp. It was proven that the oxidized rosin was more soluble in the solvent than the sticky rosin, which is entirely contrary to what might be expected. Nevertheless, the ammonia process is not as accurate or as reliable as the emulsification process which has superseded it. In this method soap solutions of 0.25 per cent concentration were used.

The present status of the methods for testing the strength of pulp and paper was also discussed. Still another subject was the precipitation and colloid titration of lignosulphonic acids with the aid of fuchsin. This method permitted certain interesting conclusions regarding normal sulphite waste liquor. Such liquor contains lignosulphonic acids of widely different sulphur content. Der Papierfabrikant, 1931, pages 801-807.

◆ Apparatus for Mixing Fibers and Water

This apparatus is particularly useful for regulating the consistency of the pulp and water mixture in the manufacture of paper, where it is highly important to have a uniform mixture. As can be seen from the accompany illustration, the original material enters at (1) and the material that is to be added thereto at (2). The built-in helical surfaces (3) cause the material (1) to revolve in the direction shown in the illustration. The substance that enters at (2) comes in at right angles to the flow of the original substance and the second substance is also started in motion by the helical surfaces. The fact that the motion of the second substance in its circulation is opposite to that of the first substance causes a thorough mixing of the two. Finally, the whirling



motion of the two substances comes to rest, and the mixture passes between the flat walls (4) which also aid in bringing the substances to rest. Arca Regler A.G., Berlin-Schoenberg, Germany. German Patent No. 529,512.

◆ Sizing Pulp

This is a process for the sizing of paper with the aid of rosin and involves the addition of reducing substances to the beater during the sizing operation. It has been found that the sizing process may be considerably improved by the addition of substances, which will act

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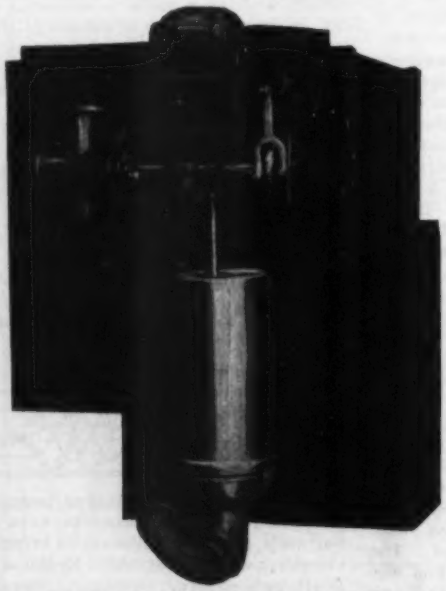

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against the injurious influence of the oxygen compounds of nitrogen in combination with the oxygen of the air, which is manifested even during the production of halfstuff in the beater. Compounds of di-basic and tetra-basic sulphur are particularly suited for overcoming the aforementioned difficulties, particularly the sulphite, such as sodium sulphite. The nitrous acid, which causes oxidation of the rosin size along with the oxygen of the air, is completely destroyed. It is advisable to determine the quantity of substances to add by first making a small preliminary experiment. A sample is taken from the beater and filtered. The water is pressed out of the pulp, and the quantity of reducing agent, that has to be added, is determined by the color which the water sample gives with Lunge's reagent. Dr. Otto C. Strecker, Darmstadt, Germany. German Patent No. 536,784, filed February 26, 1930.

◆ Corrugated Kraft Paper

Figure 1 shows a machine for the production of kraft paper of single thickness with corrugations or the like, and Fig. 2 a machine which makes the same paper in several thicknesses. The principal part of the machine, as shown in Fig. 1, is two cylinders (1) and (2). One of these cylinders has grooves in the form of the protuberances which are to be formed in the final paper product, while the other cylinder carries these protuberances in relief. There is also an endless metal belt (3) which also carries grooves or depressions of the same character. This belt has for its purpose the rapid drying of the paper and it is accordingly heated in some suitable manner, for example, by means of the hot cylinder (11) or by means of heaters which may be located in the pulleys (4) and (5). The metal belt (3) on which the coated paper is to be pressed, passes between the two cylinders (1) and (2) at the same time as the paper (6). The paper is finally wound up on the roll (7).

In the case of Fig. 2, which represents the apparatus used for making the corrugated paper product in several thicknesses, the first roll of paper which is unwound is shown at the very end of the machine on the right. This paper web is passed between rollers which applies an adhesive coating so that the second web of paper is firmly united with it. The gluing arrangement is seen at (3) and the two webs of paper at (6) and (6¹). The corrugated effect is produced by the rollers (1) and (2) and the paper is then rapidly dried over the cylinder (9) and finally wound up on (10). Georges Charriaud, France. French Patent No. 39,241, addition to No. 700,236.

Fig. 1

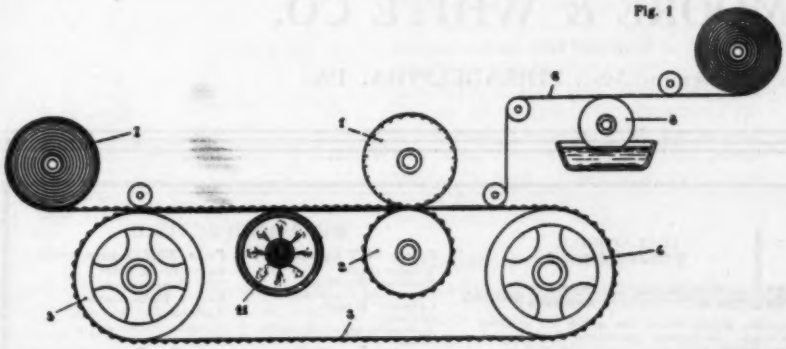
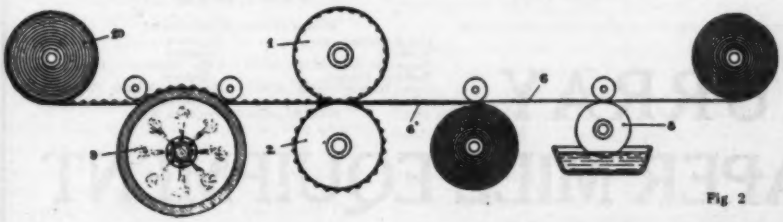


Fig. 2

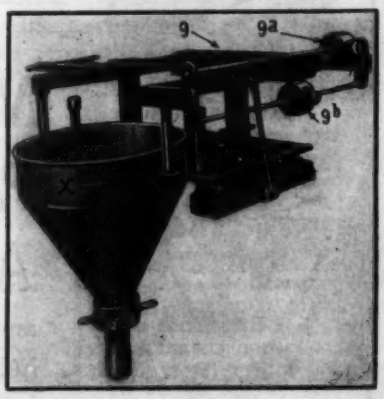


◆ Heat Balance in Chlorine Digestion and Bleaching

The heat of reaction that is liberated during the digestion of fibrous substances with the aid of chlorine and during the bleaching of pulp is interesting both to the practical man and the scientist. For the increase in the temperature, which is caused by this heat, brings about certain important effects. Experiments were carried out in a metallic carlorimeter in a reaction vessel of 200 c.c. capacity. The action of chlorine in the form of chlorine water as a gas introduced into the aqueous emulsion of stock and as a gas introduced into the moist material, such as pinewood flour or unbleached pulp was studied. Furthermore, the heat of reaction during the chlorine bleaching of pulp was established. The quantity of chlorine reacting could be calculated in the chlorine gas experiments only from the quantity of hydrochloric acid formed due to the large amount of gas that was used in excess. This was possible, since 70 per cent of the chlorine gas formed hydrochloric acid according to practical observations. An average heat effect of 470 kilogram-calories per gram of chlorine was obtained. Heat values of considerable magnitude were found only when the chlorination was slight, particularly when the chlorine was introduced into the aqueous emulsion of pulp. Additional experiments were made to determine to what degree this is due to the lesser formation of hydrochloric acid. A formula has been worked out for the increase of temperature. The increase in temperature in the chlorine water bleach of chemical pulp is not of any consequence. In bleaching compressed wood pulp with gaseous chlorine, when the absorption of chlorine amounts to 5 per cent, the temperature increase is expectedly 5 per cent; this is, however, not injurious. The heat effect in the chloride of lime bleaching process is approximately 1100 kilogram-calories per gram of chlorine. The temperature increase in the beater bleaching process with 5 per cent consumption of chlorine is 3 degrees C., and it is 9 degrees C. when the concentration of the bleaching liquor is high. It is interesting chemically that the heat effect, calculated on the basis of chlorine, is almost twice as great, as in the case of chlorine gas bleaching and in that of chlorine digestion. Dr. Herbert Rauchberg. Der Papierfabrikant, volume 29, pages 825 to 827.

◆ Regulating Density of Stock Fed to Paper Machine

The device, which is shown in the accompanying illustration, is used to attain in most rapid manner the required density of stock with varying quality of stock. This is automatically controlled. This stock weighing machine is provided with three weights, a large, stationary equalizing weight (9) and



two small adjustable weights (9a) and (9b), the first being blue and the second red. The stock is fed through the funnel. The weighing machine is also connected with a compressed liquid relay. The position of both weights (9a) and (9b) determines the conditions under which a regulator can assure requisite stock density at a given quality of stock. Wochenblatt fuer Papierfabrikation, volume 62, 1152-3.

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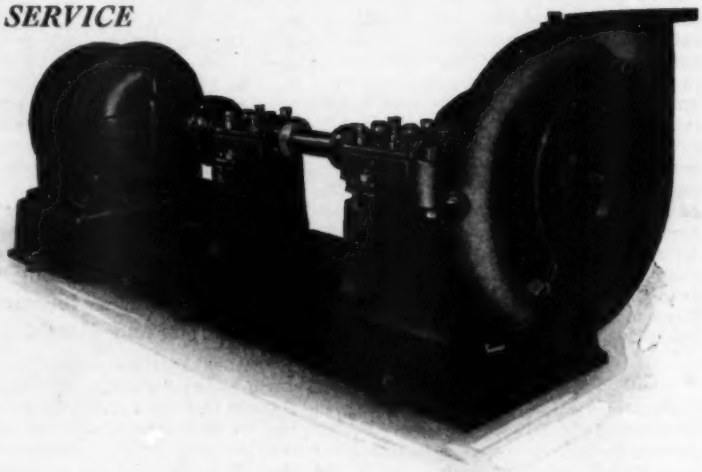

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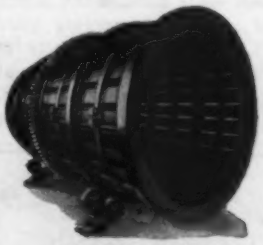

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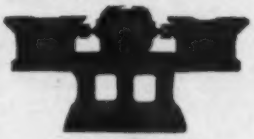

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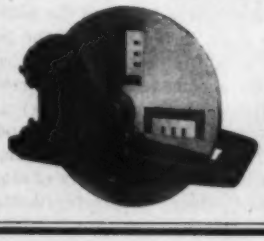

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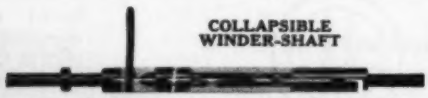

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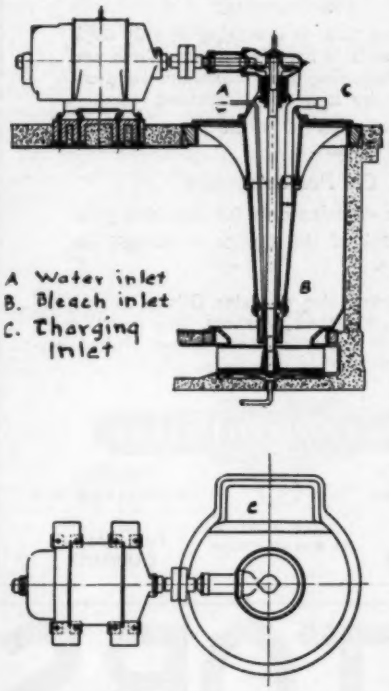
◆ New Apparatus for Handling Paper Stock

The article describes a number of new developments in conveying and handling machinery of Norwegian origin, which will be of interest to the American paper and pulp engineer. The resistance to the movement of stock of high density is dependent on the internal resistance of the stock, which increases as the



density of the stock increases, and on the friction between the stock and the surfaces with which it comes in contact. A preliminary condition to obtaining a good result with the thick stock is that all speeds of travel must be small, from which it follows that the cross-sectional areas in the pumps, etc., must be large and the speed of the pump must be small. The inclusion of air in the thick stock is a difficulty that can be overcome only by using a special design of pump. The author describes a number of pumps which have been designed just for this purpose.

Figure 1 shows a pump which is used for conveying stock with a density of 8 to 12 per cent and no more. It is employed as an adjunct to bleaching beaters. The propeller is located on the lower end of the vertical shaft and is carried in string ball bearings. The shaft is carried in pockwood bearings with circulation of water through them. The power for driving the pump is obtained from a horizontally placed motor. There is a reduction gear between the motor and the pump for reducing the speed to the required low value. The bleaching liquor and the warm water or steam, as may be required, are introduced through annular-shaped chambers in the neck of the bearing through radial nozzles. The bleaching liquor is added directly in front of the propeller, and the result is that it is intimately and uniformly admixed with the stock. Georg H. Golbs, Oslo, Norway. Zellstoff und Papier, 1931, pages 625 to 629.

◆ Drying Paperboard with Flue Gases

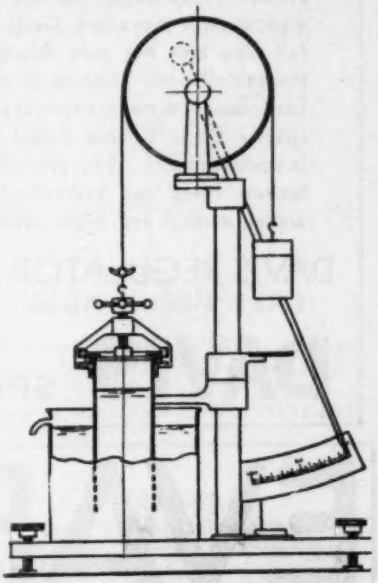
Experiments were carried out in a Russian paper mill on drying paperboard with the aid of flue gases from the boilers. The moist paperboard was hung in a suitable chamber and the flue gases, after being diluted with air so as to bring the temperature down to 90 to 100 degrees C., were used as the drying agent. The hot gases were first passed through a filter composed of two copper screens separated by a layer of anthracite ash. The particles of ash and coal in the flue gases were removed in this manner. The gases were then used for drying the paperboard. Numerous tests showed that the paperboard, that was dried in this manner, did not appear different from that dried in the ordinary manner. The product was not soiled in any way. Difficulties in this drying operation are, however, encountered when the combustion gases from burning wood and bituminous coal are used. These gases contain fine particles of carbon which cannot be removed by the ordinary filter. In these cases it is necessary to use an electrical precipitator. It was found that even under these conditions when expensive apparatus had to be used the economy of the process was still greater than in that where steam is used. Costs are calculated. L. Ljuboschitz, Bumashnaja Promueschljennostj, 1931, number 4.

◆ Sulphite Digestion with Reduced Steam Consumption

Waste heat from the roasting of pyrites or sulphur may be used to advantage in the sulphite process proper. When the roaster gases are passed through an electrical precipitator they may be allowed to enter the tower irrigated with milk of lime at a temperature of 400 degrees C. The heat is thus better utilized. This procedure is reported to have given a saving of approximately 0.2 to 0.3 ton of steam per ton of pulp. The heat that is removed from the digester in the form of blow-off gases and waste liquor is also recoverable. A study was made of the conditions of digestion as far as they affect the loss of heat and its recovery. The fact that the loosely filled digester requires more frequent blowing off than the one that is more compactly filled results in greater loss of heat as well as sulphur dioxide and nitrogen. The presence of additional air in the top of the digester results in a changed composition of the waste gases which contain more sulphur dioxide and less nitrogen as well as more carbon dioxide. The content of the latter gas in the waste gases has been generally overlooked, and it varies and increases the more rapid and the more intensive the digestion. At the start of the process the waste gases contain up to 80 per cent nitrogen (figured on the dry gases) and this decreases to about 5 per cent at the end of the digestion. The carbon dioxide content increases from 5 to 10 per cent to about 85 per cent during the period of most intense reaction. O. Hiller. Bumashnaja Promischlennost, volume 9, No. 5/6.

◆ Testing the Porosity of Paper to Air

The porosity of paper to air is an important property of paper that is put to industrial use rather than to the ordinary printing and writing applications. The illustration shows the apparatus which is used for testing the paper. It



consists of a bell which is balanced in a vessel full of water. The lower closure of this bell is formed by a sample of the paper that is being tested. The movable bell is suspended by a cord which passes around a pulley of large diameter, which is mounted on very sensitive ball bearings. There is a counterweight at the other end of the cord. This counterweight balances not only the weight of the bell, but it is selected in weight so that it lifts a column of water of definite height, thus causing a vacuum under the paper equal to the height of this column of water. The latter is lifted in proportion to the amount of air that passes through the paper. Inasmuch as the counterweight maintains a constant reduced pressure under the paper, the quantity of air that passes through the latter is measured by the height to which the bell is raised. A pointer of considerable length indicates this distance on a suitably graduated scale, which reads cubic centimeters of air. A simple arrangement is used for compensation of the weight of the portion of the bell that is submerged in the water. The results obtained with the instrument are recorded graphically on curve sheets and the value of the test for practical purposes is explained

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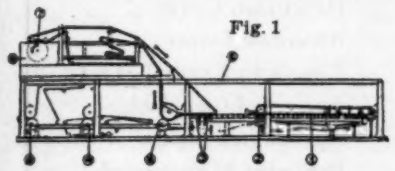
in the article. Lhomme and Argy and P. Bard. La Papeterie, 1931, pages 1432-1445.

◆ Paper in Double Thickness

The process is concerned with the production of a paper or thin cardboard of double thickness in which the fibers of the individual layers of pulp are made to interlace with each other in such a manner that a product of exceptional strength is obtained. The result is that a pulp of best quality and highest cost need not be used, but an inferior grade will give good results, which it cannot do in the ordinary process of manufacture.

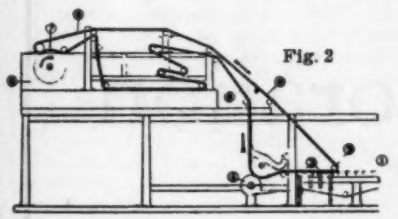
The apparatus which is used to effect this process is shown in Fig. 1. It consists first of a flat part (1) or wire part

Fig. 1



which carries the usual suction boxes (2), the secondary suction boxes (3) and the presses (4). Above the fourdrinier machine there is located a cylinder machine, which is supported by the framework (5). This machine consists of a chest or vat (6) for the pulp and the cylinder wire (7) which rotates in the direction of the arrow. There are no presses in this machine. Fig. 2 is a more detailed view of this part of the

Fig. 2



machine. The felt (8) passes over rollers spaced at convenient intervals. It passes around the roller (9) which is located above the wire of the machine (1). This felt takes up the web of paper from the cylinder (7) and carries it in the direction shown by the arrow and brings it into contact with the paper web that is made on the wire (1), this being accomplished somewhere in the vicinity of the roller (9). The felt (8) then moves the combined webs of paper over the suction boxes (3) and the presses (4). There it releases the combined webs, which have been united into a single sheet of paper and the paper is dried in the usual manner in the dry end of the machine. The felt (8) then returns to the cylinder (7) and takes up an additional web of paper from it, after it has, however, first passed through the usual washing and cleansing machines which are shown in diagrammatic form in Fig. (2). A high grade product is thus obtained. Enrique Casanovas. French Patent No. 700,541.

◆ Obtaining Pulp from Vegetable Materials by Means of Chlorine

The new process is based on the observation that the vegetable material, for example wood, attains a peculiar penetrability and porous structure when it is given a double basic and acid preliminary treatment, one following the other in alternation. This is especially true when the wood is subjected to acid treatment in the disintegrated state. The disintegration of the wood into fibres is accomplished after it has first been treated with basic liquors. The nature of this treatment depends on the character and quality of the wood, and hence the concentration of the digestion liquor, the temperature of the treatment and its duration as well all vary. It is possible to carry out the basic treatment without any difficulty in avoiding injury to the wood fibres. After the acid treatment, the pulp becomes very porous and this structure is very favorable to the penetration of bleaching liquor. The result is that the pulp is simultaneously bleached with a minimum consumption of chemicals, even though the pulp does not have the appearance of the normal unbleached pulp before the operation, nor the properties of such a pulp; in fact, it contains often considerable quantities of incrustating materials. Verein fuer Chemische Industrie A.G., Frankfurt-am-Main, Germany. German Patent No. 533,647.

◆ Chlorination of Milk of Lime with Liquid Chlorine

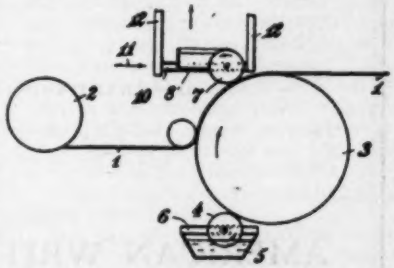
A description is given of an installation for the automatic preparation of bleach liquor of approximately 35 to 48 grams of active chlorine content. The liquor must be kept in alkaline state in order to keep best. An excess of 5 per cent over the theoretically required quantity of lime should be present at least. When the quicklime contains at least 80 per cent of CaO, then the process will work satisfactorily. Conditions that should be maintained during the burning of the limestone are also outlined. The bad effects of the presence of iron and manganese salts on the chlorination process, because of their catalytic activity, are also described. It was found that the bleach liquors which were made in accordance with this process clarify more readily than those made from chloride of lime. Gorbowskij. Bumaschnaja Promischlennost, 9, 78.

◆ Parchmentizing Paper

The process is carried out in apparatus which is shown in diagrammatic form in the accompanying illustration. The paper web (1) is unwound from a paper roll (2) and passed over the guide roller (3) which can be heated or cooled. This roller is driven in the direction of the arrow shown in the figure. Another roller (4) is located almost directly underneath the roller (3). The axes of the two rollers are parallel to each other. The roller (4) dips into the bath (5), which is filled with sulphuric acid, and makes contact with almost the entire surface of the roller (3) or at times with the entire surface. The roller (4) is supported in suitable bearings which can be moved along the guide rails (6), so that it is possible to vary the contact of the roller (4) with the roller (3).

Near the very top of the roller (3) there is arranged the roller (7) in front of a box which has one open side (8). This box contains sulphuric acid and the roller fits so snugly into the box that the acid cannot leak out. The roller (7) is similarly supported on bearings which can be moved along guide rails (10) in the direction of the arrow (11). The entire arrangement of box and roller can be moved vertically along the guide rails (12).

The paper web (1) makes contact with the roller (3), which is coated with



sulphuric acid of a certain concentration by means of the rollers (4) and (7), and the paper is thus parchmentized. Heinrich Nicolaus & Co. G.m.b.H., Kempten, Germany. German Patent No. 531,-127.

◆ Papermaking Inventions

Cigarette Paper—A method of incorporating "a natural gum containing soothing and sweetening elements" is covered in a patent issued Jan. 5, 1932, to Basil Seferiadis, assignor to S. C. Patents, Ltd., London, England.

Soda Cellulose for Viscose—A patent has been issued, as of Jan. 5, 1932, to George A. Richter, assignor to Brown Company, Berlin, N. H., on a method of making "aged soda cellulose" from a woodpulp having an alpha celulose content of at least 96 per cent, such cellulose being capable of being completely xanthated to form viscose, the first step in the manufacture of rayon.

Straw Pulp—A series of patents have been taken out by John Traquair, assignor to The Mead Corporation and The Mead Research Engineering Company, Dayton, Ohio, as of date Feb. 2, 1932, covering methods of pulping straw and hard deciduous woods.

Suction Device on Paper Machine—Under date of Feb. 2, 1932, there has been assigned to Tomkins, Hawley, Fuller Company, Valatie, N. Y., certain improvements to a papermaking machine, comprising a web forming member, a felt apron overlying a section thereof, means for subjecting said section of the forming member and the felt apron to the combined action of air blast and suction devices and a drying roll, said felt apron leading directly from the forming member to the drying roll.

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The COMMERCIAL OUTLOOK

New York, March 1, 1932.

PAPER manufacturers and mill executives who flocked to New York week before last to attend the annual convention of their trade association all seemed to have the same story to tell concerning their business. Judging from the information secured at the yearly gathering of paper industry leaders, paper mills are operating at substantially less than capacity and even less than what might be designated as normal capacity; demand for paper is developing in a consistent manner but it lacks volume; buyers in general are bent on keeping their position as liquid as possible and are not prone to absorb supplies other than to satisfy present requirements, with the result that small-lot purchases now predominate; competition for orders for virtually all classes of paper is exceedingly keen, and prices have gradually receded until there is scant margin, or no margin at all, for manufacturers to realize a profit.

In brief, it is quite apparent that the paper industry is in the same boat along with the other major manufacturing industries of the nation; the depression—which some authorities say is starting to lift—is having its full influence on the paper market and is creative of problems and difficulties which make the lot of the paper producer or distributor anything but a happy one at the moment. Yet it is believed that the net results of the annual confab of paper men in New York will be to clarify and relieve the unfavorable market situation to some extent, and it is apparent that an improved sentiment prevails within the industry. Nearly everyone in the trade is talking more optimistically, and is hopefully looking ahead to a broader demand for paper, a better price position and general improvement in marketing conditions.

New York paper merchants and mill representatives report business at least holding its own. If anything, there has been a little increase in buying interest and a proportionate expansion in actual demand for some kinds of paper. Consumers and converters remain very cautious in their attitude and seem bent on supplying their urgent needs only. Moreover, it is evident that, due to the general situation and also to circumstances in individual trades, there is not the scope to consumers' requirements that is seen in busier times, and this is the all important factor curtailing demand for paper.

A distinctly favorable phase of the market is the steadier tone noted in prices of paper. Since the first of the year quotations from mills and merchants have acquired a good deal more firmness. Not only are manufacturers no longer reducing prices or granting concessions in individual cases to so-called favored customers, but in instahces market levels have been advanced to some extent. There is a decidedly firmer price tone in kraft paper on the higher basis recently established; fine papers are adhering to fully sustained levels; some of the specialties are quoted at advanced prices, and boxboard values have stiffened perceptibly. It would appear as if paper producers have come to realize that, first, market prices of their product were on exceedingly low levels, and that, second, the very low market basis prevailing was not in the least stimulating demand, and steps have been taken in some branches of the industry to establish prices on at least slightly more favorable levels. The feeling is general within the trade that bottom prices have been seen in the market and that the turn in the price movement has finally come, with the market now pointed upward and likely to score substantial advancement, depending on the consuming condition and the demand emanating from consumption quarters during the next several months.

Identical mills in the United States produced a total of 5,137,138 net tons of paper of all kinds during the calendar year 1931, comparing with 5,657,702 tons manufactured by the same mills during 1930, according to the American Paper and Pulp Association. Thus, last year's output, based on identical mill returns, was 9.2 per cent below the 1930 production. Shipments from mills last year aggregated 5,139,089 tons, against 5,624,705 tons shipped by the same group of mills in the preceding year. Stocks at mills at the end of last year were 256,845 tons, showing some decline from the 268,764 tons held a year previously. December paper production amounted to 371,137 tons, contrasted with 389,377 tons in the preceding month, the daily average output in December recording a decrease of 7.9 per cent from the November, 1931, production, and of 9.1 per cent from the December, 1930, output.

In another compilation, the American Paper and Pulp Association estimates total production of paper in the United States during 1931 at 9,162,000 tons, comparing with 10,124,400 tons in 1930, and 11,140,235 tons in 1929. Last year's output of newsprint in domestic mills was 1,157,500 net tons, against 1,226,086 tons in 1930; of uncoated book paper 1,145,000 tons, against 1,389,500 tons; of wrapping paper 1,430,000 tons, against 1,580,489 tons; of writing paper 450,000 tons, against 545,000 tons; of hanging paper 76,600 tons, against 106,427 tons; of catalog paper 102,000 tons, against 114,588 tons; of cover paper 18,000 tons, against 25,000 tons; of tissue paper 360,000 tons, against 362,355 tons; of absorbent paper 74,000 tons, against 81,813 tons; of building paper 420,000 tons, against 468,730 tons; of boards 3,850,000 tons, against 4,060,716 tons, and of other paper 78,900 tons, against 163,696 tons.

Production of newsprint climbed in January as compared with December, reaching a total of 265,568 net tons in United States and Canadian mills, against 259,034 tons in December, according to the News Print Service Bureau. Total shipments from mills in both countries were 266,393 tons, or in excess of the output, during January. The United States production in January was 94,247 tons, against 93,861 tons in December, while Canadian mills manufactured 171,321 tons in January, compared with 165,173 tons in the preceding month. During January, 23,991 tons of newsprint were made in Newfoundland and 1,255 tons in Mexico, so that the total North American production for the month aggregated 290,814 tons.

The Canadian mills produced 11,752 tons less newsprint in January than in the same month last year, which was a decrease of 6 per cent. The output in the United States was 6,947 tons or 7 per cent less than in January, 1931; in Newfoundland 1,595 tons or 6 per cent less, and in Mexico 168 tons more, making a total decrease of 20,126 tons or 6 per cent, as compared with January, 1931. Stocks of newsprint at Canadian mills totaled 53,683 tons at the end of January last and at U. S. mills 32,406 tons, making a combined total of 86,089 tons, compared with 86,913 tons at the end of December last.

Paperboard production in the United States during 1931 reached a total of 2,547,159 net tons, comparing with 2,699,595 tons produced in 1930, and 3,003,334 tons in 1929, according to the summary of the board industry compiled by the U. S. Department of Commerce. Board production last year was at 65.7 per cent of mills' rated capacity, against 68.9 per cent in the preceding year and 76.7 per cent in 1929. Shipments from mills amounted to 2,532,691 tons during 1931, or slightly below the year's output, and comparing with 2,692,498 tons shipped in 1930 and 2,995,975 tons in 1930. Stocks on hand at mills at the close of 1931 aggregated 86,919 tons, contrasted with 72,451 tons a year before and 65,354 tons two years before. Board manufacturers received new orders calling for a total of 132,600 tons of board in December last, against 173,936 tons in the preceding month, and had unfilled orders on hand at the end of December for 34,949 tons, compared with 61,067 tons a month previously.

❖ ❖ ❖

◆ AMTORG Trading Corp., a New York concern, dealing in Russian goods, was recently granted a license to do general merchandising business in Illinois, with headquarters in Chicago.

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Domestic RAW MATERIALS

◆ Papermaking Rags

While better activity has developed in some of its branches, from a general standpoint the market for papermaking rags continues in a dull condition decidedly. Despite expectations that by this time consumers would be more frequently in the market, despite the belief among dealers that mills with few exceptions are proceeding with very small stocks of rags on hand, and despite the offerings of various grades of rags at attractively low prices, paper manufacturers are manifesting restricted interest in this division of their raw material source and apparently are limiting their purchases to small quantities needed to cover urgent requirements.

The quietness prevailing involves all classes of papermaking rags other than in several particular cases. Roofing stock is selling in a consistent manner though in much smaller tonnage than ordinarily, and there are occasional transactions reported in certain grades of new cotton cuttings and in old thirds and blues; aside from these descriptions it can be said that demand is slow indeed and scarcely sufficient to even so much as constitute a market. Prices in nearly all instances are in favor of buyers, which is to say that papermakers are enabled to secure the limited amounts of rags desired at almost any price within reason which they deign to bid.

At the same time, there is no doubt but that a supply situation is in process of development which has its bullish aspects. Rag collectors and graders the country over are forsaking the industry in search of more lucrative forms of livelihood, and incoming supplies of rags of all kinds are falling far short of normal. There are not the accumulations usually seen in packing circles, and, moreover, importations of all varieties of papermakings rags from abroad have dwindled to next to nothing. Dealers are emphasizing to mill customers that the very low levels to which market values have sunk is greatly reducing the available supply, and are predicting that once mill demand increases even to a comparatively slight degree prices will register a quick and fairly sharp advance. However, consumers appear satisfied to take their chances on this eventuality and are in no mood to stock up rags at present while not in need of supplies other than the limited-sized lots they are now absorbing in spasmodic fashion.

Not only are roofing rags in a firm, if not strong, supply position, but market prices have shown some little rise. Eastern mills, evidently experiencing difficulty getting the quantities wanted, raised their bids half a dollar per ton a few days ago, and the market in the Middle West is equally as firm of tone. In the East, No. 1 domestic roofing stock or cloth strippings are selling at 60 cents per hundred pounds f.o.b. dealers' shipping points, and No. 2 stock stock or mixed satinets at 45 cents. Slightly above these market levels prevail in the Middle West. Foreign dark colored cottons are on a price basis of about 60 cents a hundred pounds ex dock American Atlantic ports for forward shipment from abroad, and, as is the case in practically all grades of foreign rags, importers assert it is extremely difficult for them to buy abroad at prices permitting them to sell to mills here at the figures the latter are willing to grant, since higher market levels exist in countries of origin.

New No. 1 white shirt cuttings are moving in some directions at a price basis of about 4.50 to 4.75 cents per pound f.o.b. shipping points, and new unbleached muslins, blue overall cuttings, khaki cuttings and canton flannels are finding some sales outlet. Otherwise new cuttings, and more especially linen cuttings, are very hard to market, almost regardless of the prices sellers intimate willingness to accept.

Repacked thirds and blues are quoted at around 1.20 cents a pound at shipping points, and are in some demand. Old white cottons are little wanted and are mainly nominal in price.

Average quotations f.o.b. shipping points and ex dock New York, many of which would be considered nominal, follow:

NEW STOCK

	New York and Chicago
White shirt cuttings, No. 1	4.50-4.75
White shirt cuttings, No. 2	3.25-3.50
Fancy shirt cuttings	1.75-2.00
Washables, No. 1	1.75-2.00
Unbleached muslins	5.75-6.00
White lawns	3.25-3.50
Overall cuttings, blue	4.25-4.50
Black silesias	2.25-2.50
Canton flannels, bleached	4.75-5.00
Canton flannels, unbleached	4.25-4.50
Shoe cuttings, bleached	4.50-4.75
Shoe cuttings, unbleached	4.00-4.25
Light silesias	4.00-4.25
O. D. khaki cuttings	4.00-4.25
Mixed khaki cuttings	3.50-3.75
Corduroy cuttings	2.25-2.50
Cottonade cuttings	1.75-2.00
Linens, No. 1 white, foreign	7.00-7.50
Light prints, foreign	2.25-2.50

OLD STOCK

Whites, No. 1, repacked	2.75-3.25
Whites, No. 2, repacked	1.75-2.00
Whites, house soiled	1.35-1.50
Whites, street soiled	1.10-1.25
Thirds and blues, rough	.60- .75
Thirds and blues, repacked	1.15-1.30
Lace curtains	2.75-3.00
Black stockings	1.75-2.00
Cotton canvas, No. 1	3.00-3.25
White cotton batting	1.00-1.25
Roofing, No. 1 (cloth strippings)	.60- .70
Roofing, No. 2	.45- .55
Linsey garments, foreign	.70- .75
Dark colored cottons, foreign	.55- .60
Blue linens, foreign	2.75-3.00
Gray linens, foreign	3.00-3.25
White linens, foreign	4.75-5.00
Light prints, extra foreign	1.75-2.00

◆ Rope and Bagging

A little more demand from some paper mills for old rope has been reported and the market for this commodity seems to be a bit livelier. However, consumers have refused to grant any higher values, and prices remain on about last levels with dealers and importers complaining that they cannot eke out any profit in handling old rope in the current market. Domestic No. 1 old manila rope is bringing 1.50 cents to perhaps a little higher in some cases f.o.b. shipping points, and mills also are paying 1.50 cents ex dock New York for imported No. 1 old rope.

Scrap bagging is wanted only in piecemeal fashion by paper manufacturers who seemingly are filling their requirements without having to alter their buying rates, and the market shows no change of consequence. Such slight revisions as have been recorded in market levels have been downward other than perhaps in roofing bagging which is relatively firm in price and moving in a steady way.

F.o.b. shipping point and ex dock New York quotations follow:

Gunny, No. 1 domestic	.90-1.00
Gunny, No. 1 foreign	.90-1.00
Scrap bagging, No. 1	.75- .85
Roofing bagging	.40- .50
Wool tares, heavy	1.00-1.15
Wool tares, light	1.00-1.10
Manila rope, No. 1 foreign	1.40-1.60
Manila rope, No. 1 domestic	1.50-1.75
Sisal strings	1.25-1.50
Mixed strings	.60- .70

◆ Old Paper

The market situation in old paper is exhibiting some increase in activity and a steadier price undertone. There has been no important uptrend in values and yet certain grades, more particularly the low classes of waste paper, have stiffened perceptibly in price—not so much because of any appreciable broadening of consuming demand but because of collectors and packers restricting their output of such material in an effort to force market values up to where they can break even in handling this class of stock for paper and board mills. In the East, mixed paper has firmed to a degree where packers in New York are reported holding out for at least 20 cents per hundred pounds f.o.b. that city for No. 1 mixed, and meanwhile burning or dumping a good percentage of the mixed paper collected. Folded news is selling at 30 cents a hundred f.o.b. New York, while book stock is reported moving readily on a price level of 65 to 70 cents per hundred pounds for No. 1 heavy and around 55 cents for crumpled book stock. Old kraft paper is available at 85 cents a hundred at shipping points, and ledger stock or ordinary quality at 60 to 70 cents. White shavings are selling in spotty fashion though in fair volume and prices adhere to about unchanged levels.

The following are quotations f.o.b. shipping points:

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	New York and Chicago
Hard white shavings, No. 1	1.90-2.25
Hard white shavings, No. 2	1.70-1.90
Soft white shavings	1.50-1.75
Colored shavings	.50- .60
Heavy book, No. 1	.65- .75
Crumpled book, No. 1	.50- .60
Ledger stock	.60- .90
Kraft, No. 1	.80-1.00
New kraft cuttings	1.40-1.50
White blank news	1.30-1.40
Manilas, No. 1	.40- .50
Manilas, container	.30- .40
Folded news	.30- .40
Sulphite mill wrappings	.35- .50
Old corrugated boxes	.30- .40
New corrugated box cuttings	.40- .50
Mixed paper, No. 1	.20- .30
Common paper	.15- .20

◆ Pulpwood

Dullness characterizes the market for pulpwood and buyers in practically all quarters are said to be manifesting very little interest. There is, of course, a routine movement of supplies into consuming channels against contracts, but current purchases are of scant importance and prices are altogether on the side of buyers.

◆ Mechanical Pulp

The market for mechanical pulp also lacks worthwhile activity since consumers evidently have their needs provided for by incoming supplies against contracts and old orders, and are seldom making their appearance as buyers. The open winter has enabled grinders to operate with little or no difficulty, and it is no secret that some pressure is being exerted on buyers to place orders. Canadian groundwood is reported available at $18 to $29 per ton f.o.b. producing mills in the Dominion, and it is said that purchases probably have been effected at even cheaper prices, depending on the haul to consuming points and the air dry test. Domestic grinders are reported endeavoring to secure somewhere in the vicinity of $23 a ton at pulp mills for prime groundwood.

Production of groundwood in the United States in December amounted to 70,692 net tons, compared with 73,994 tons produced by identical mills in the preceding month, according to the American Paper and Pulp Association. Stocks on hand at producing plants at the end of December totaled 56,747 tons, against 54,852 tons a month before.

◆ Chemical Pulp

Little else than a routine demand prevails for chemical woodpulp of domestic manufacture. Contract shipments are going forward steadily and in moderately good tonnage but spot business is of narrow compass and of no influence on the market. Producers are given to complain of foreign pulp competition and of the market prices obtaining, and declare it is impossible for them to realize a profit in their product under present circumstances. Bleached soda pulp is quoted at 2.50 cents a pound delivered paper mills, while domestic kraft pulp is reported available at 2 cents and less f.o.b. pulp plants. West Coast bleached sulphite is reported on offer at 2 cents, and even lower, and domestic unbleached sulphite is on a price level of around 1.65 cents per pound at producing mills.

Mills in the United States produced 81,824 net tons of chemical pulp in December, compared with 85,909 tons manufactured by identical mills in the preceding month, according to American Paper and Pulp Association figures. Total output of all pulp—mechanical and chemical—last year reached 1,997,531 net tons, against 2,329,714 tons produced by the same mills in the calendar year 1930. Stocks of chemical pulp at the end of December last at producing mills were 20,056 tons, against 19,423 tons a month before.

Quotations f.o.b. pulp mills are as follows:

Bleached sulphite	2.00-3.50
Easy bleaching sulphite	1.80-2.00
Unbleached sulphite, No. 1 strong (news grade)	1.50-1.75
Unbleached sulphite, No. 1 book	1.65-1.85
Soda pulp bleached (delivered)	2.25-2.50
Kraft	1.75-2.00
Screenings, refined	(Nominal)

◆ Chemicals

Chemicals for pulp and paper mills are moving fairly well against contracts but current activity in the market is on a narrow scale. In short, consumers have little need for supplies over and above their contract commitments, and are seldom entering the market as purchasers. Prices as quoted hold to unchanged levels in most instances. Caustic soda is priced at 2.50 cents per pound for the solid product f.o.b. works, and soda ash is on a quotable basis of 1.15 to 1.25 cents for 58 per cent light ash packed in bags. Casein quotations continue to range between 7.50 and 9.50 cents per pound, and brimstone prices are $18 to $20 per long ton at mines.

Average quotations are as follows:

Alum, lump ammonia	3.50- 3.75
Alum, lump starch	3.75- 4.00
Blanc fixe, powdered	3.25- 3.50
Bleaching Powder	1.75- 2.00
Brimstone (long ton, at mine)	18.00-20.00
Casein (duty paid)	7.50- 9.50
Caustic soda, solid, spot delivery	2.50- 2.55
China clay, domestic washed	7.00-11.00
China clay, foreign	11.00-13.00
Rosin	3.55-
Satin white	2.00- 2.25
Soda ash, 58 per cent light (bags)	1.15- 1.25
Starch, papermaker's in bags	2.54-
Talc (ton)	16.00-18.00

❖ ❖ ❖

◆ New Handkerchief Machine

One of the new additions to the line of high-speed paper converting machines made by the Paper Converting Machine Co. of Green Bay, Wisconsin, is the new handkerchief machine. In it the builders have incorporated their patented full rotary principle which is famous for producing a perfect product at all speeds. The new machine is rated as being able to produce 500 handkerchiefs a minute, quarter folded and cut, though higher production is possible.

Handkerchiefs can be made from either 3 or 4-ply stock and folding mechanism can be had to deliver them either quarter folded, interfolded, or in any special fold desired. A shear cut type of "cut off" is used in this machine. This type of "cut off" is noted for its clean, square cut which adds materially to the appearance of the finished product.

At present two of these machines are in operation, one in the eastern states and the other in the mid-west. Both are giving excellent results.

◆ Du Pont Broadcasting Unique Radio Programs

The du Pont Company has arranged an unusual series of radio programs which will go on the air each Friday evening at 8:30, Eastern standard time, over the Columbia Broadcasting Chain and allied stations. This series will feature current events and parallel episodes in the history of the United States, and will be called "Today and Yesterday." The opening program was given Friday evening, March 4.

The musical features include a twenty-five piece orchestra under the direction of Don Vorhees; Gladys Britain, soprano, and a popular artist quartette. A special theme composition and a series of songs have been selected.

Research men and historians have been engaged to write the text for the historic presentations, which will be strikingly portrayed by a group of competent actors who will re-enact dramatically the highlights of the historic event to be featured. Even the voices of the famous men involved will be imitated as authentically as possible.

◆ Eldredge Will Direct Forest Survey in South

Inman F. Eldredge has been chosen regional director of the Forest Survey in the South, it is announced by the Forest Service, U. S. Department of Agriculture.

This work in the southern states is part of the nation-wide survey under the leadership of the Federal Forest Service. The McSweeney-McNary forest research act of 1928 authorized this work which is designed to determine accurately the remaining timber supplies, the rate at which the forests are growing, the rate of depletion by cutting, fire, insects, disease and floods, and the present and prospective needs of the people and industries of the United States for forest products. With this information it will be possible to say not only whether the United States can balance its forest products budget, but also what economic benefits through forest production may be expected from the huge acreage of forest land in this country.

The headquarters for this project in the South is at the Southern Forest Experiment Station at New Orleans.

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Import and Export MARKETS

EXPORTS

In keeping with the general shrinkage in foreign trade last year, exports of paper from the United States during 1931 registered a substantial decrease in value as compared with the preceding year. Exports of paper and paper products from this country during the last calendar year reached a total declared value of $22,419,743, according to official statistics compiled and issued by the U. S. Department of Commerce in Washington, representing a decline of 26 per cent as compared with shipments of an aggregate value of $30,302,733 in 1930.

Exports of newsprint last year amounted to 19,305,341 pounds, valued at $604,913, against 20,408,360 pounds of a value of $812,231 in 1930. Uncoated book paper exports reached a total of 19,024,407 pounds of a value of $1,154,285, contrasted with 31,829,973 pounds of a value of $2,144,395 in 1930. Writing paper exports last year totaled 14,664,660 pounds, valued at $1,309,004, against 21,064,051 pounds of a value of $2,070,040 in the preceding year, while wrapping paper shipments out of the country amounted to 28,613,496 pounds of a value of $1,629,216, compared with 44,247,669 pounds of a value of $2,759,441 in 1930.

Exports of sheathing and building paper from the United States last year were valued at $450,175, against $635,791 in the preceding year, and of tissue paper, $505,978, compared with $919,036 in 1930. Exports of box board were valued at $1,181,853 last year, against $1,498,914 in 1930; of other paper board, $1,416,779, against $1,606,638; of paper bags, $826,524, against $892,538; of paper boxes, $931,775, against $1,370,631, and of overissue newspapers, $1,538,564, against $1,335,118.

IMPORTS

◆ Wood Pulp

Importations of wood pulp into the United States during the calendar year of 1931, according to official statistics issued by the U. S. Department of Commerce, reached a total of 1,425,686 long tons of all classes of pulp, including mechanical and chemical, of a declared value of $60,907,660. This represented a considerable decrease in tonnage from the imports of 1,636,520 long tons imported in the preceding year, and a much larger decline in value as compared with imports reaching a total value of $81,286,794 in 1930.

While it was to be expected that, in view of the depression existing in industry and affecting all lines of world trade, pulp imports last year would fall below those of the preceding year, at the same time a comparison of figures shows that —from a tonnage standpoint—the wood pulp trade suffered, perhaps, less than most other branches of international trade; certainly pulp importations into the United States held up to a relatively higher level than was seen in numerous other important commodities brought into this country from outside sources. Yet total pulp imports into the United States last year were the smallest in any twelve-month in the last five years, dropping to the lowest aggregate level since 1925, showing a 12 per cent decrease compared with the 1930 imports and a 15 per cent decline from the 1929 imports of 1,441,110 long tons which stand as the record amount of pulp imported into this country in any one year.

Even sharper was the decline in the value of pulp importations last year in contrast with other years. The total value of all pulp imported during 1931 recorded a decrease of 25 per cent as compared with the value of 1930 imports, and was 32 per cent below the value of 1929 importations. The value of last year's imports fell to the lowest level witnessed in the last ten years, and was some $26,000,000 less than the value of the 1926 pulp imports of $83,208,851, which stands as the highest value of any year's pulp imports into this country.

Chemical pulp imports into the United States in 1931 amounted to 1,237,600 long tons, valued at $56,409,638, contrasted with 1,369,327 long tons of a value of $74,140,504 in the preceding year, while receipts of mechanical pulp totaled 188,086 long tons of a value of $4,498,022, against 267,193 tons of a declared value of $7,146,290 in 1930. Imports of chemical pulp last year showed a decrease of not quite 10 per cent in tonnage as compared with the preceding year's imports, whereas groundwood imports were 29 per cent under the 1930 receipts.

For a period of eight years prior to 1930, importations of chemical pulp into the United States recorded an uninterrupted climb, registering a rise from 931,992 long tons of all grades of chemical in 1922 to 1,441,110 tons in 1929. During 1930, however, when the effects of the world depression were first felt in the wood pulp trade, imports showed a decrease, and so 1931 was the second consecutive year to show a decline in imports following the period since the world war in which importations scored a steady gain. The 1931 imports of chemical pulp were the smallest since 1925, and yet constituted the sixth largest tonnage ever imported into this country in a single year.

Imports of mechanical pulp last year were the smallest, in point of tonnage, in any year during the past decade. Contrasted with the high level of groundwood imports—295,618 long tons in 1925 —the 1931 receipts showed a drop of 107,532 tons, or 36 per cent.

A feature of the chemical pulp importations into the United States last year was the relatively large receipts of bleached sulphite and of sulphate or kraft pulp. Imports of both of these classes of pulp held up to very nearly the same tonnages as were imported in 1930. The arrivals of bleached sulphite in 1931 amounted to 319,518 long tons from all sources, valued at $18,887,719, or only 3,000 tons less than the total of 322,886 long tons of a value of $22,721,929 imported in 1930. Imports of unbleached kraft pulp reached an aggregate of 344,612 long tons, valued at $12,035,030, in 1931, compared with 357,551 long tons of a value of $16,452,381 in the preceding year, while imports of bleached kraft pulp were 29,683 long tons of a value of $2,267,090 last year, against 19,533 tons of a value of $1,468,599 in 1930. Thus, combining unbleached and bleached kraft imports, the 1931 imports of all kraft pulp were less than 4,000 tons under the receipts of similar pulp in 1930.

The big decline in chemical pulp imports last year was in unbleached sulphite, arrivals of which totaled 540,478 long tons, valued at $23,033,069, contrasted with 665,049 long tons of a value of $33,193,598 in 1930.

Tracing the source of the bleached sulphite imported into the United States last year, it is found that imports of such pulp from all the major supplying countries, with the single exception of Norway, showed an increase, compared with the year before. Imports of this pulp for the year were 185,037 long tons from Canada, 48,963 tons from Sweden, 47,155 tons from Germany, 18,011 tons from Norway, and 8,922 tons from Finland. Imports of unbleached sulphite originated 300,507 tons from Sweden, 97,467 tons from Finland, 88,604 tons from Canada, 22,212 tons from Germany and 10,195 tons from Norway. Imports of unbleached kraft pulp were 252,228 tons from Sweden, 53,671 tons from Finland, 32,216 tons from Canada and 4,360 tons from Norway.

The market for foreign pulp has ruled quiet during the last month. Demand has been of narrow scope and few paper or board manufacturers have operated as buyers in any consistent manner. There have been sales, of course, but they have been of spotty character and have mostly involved comparatively small tonnage. Nevertheless the price tone has acquired firmness, and quotations are being bet-

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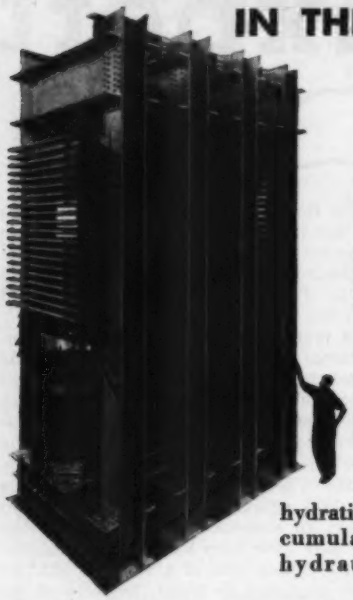

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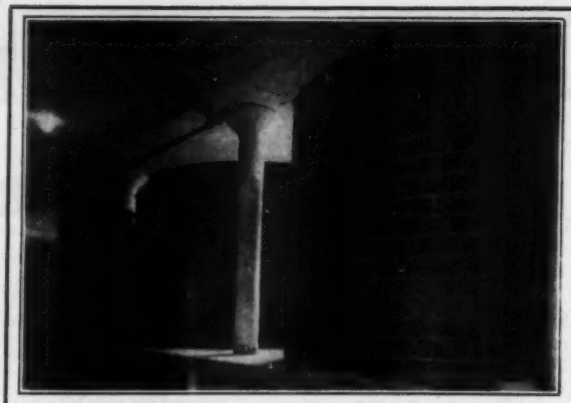

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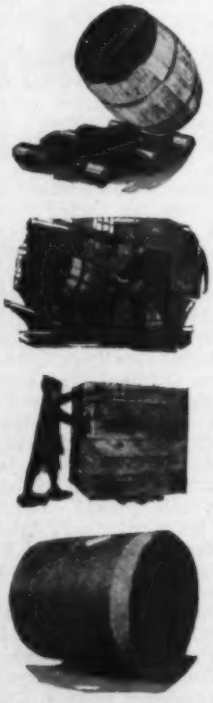

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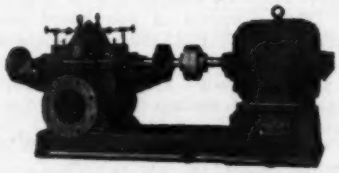

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ter sustained than in some while. One reason for this is the stronger potential position developed abroad. At this writing there seems every reason to expect a shutdown of the Swedish pulp manufacturing industry. Negotiations on the new wage schedule have fallen down and mill owners in Sweden are reported about to declare a lockout. In fact, the advices state that the lockout will go into effect on March 1, though this has not been confirmed. A cessation of production in the Swedish pulp mills would put an entirely different complexion on the pulp situation abroad, more particularly as concerns kraft pulp. It is believed in the trade here that the loss in output in that country would be made up in sulphite in other European producing countries, but that a decided shortage of kraft pulp might arise.

Manufacturers in Sweden have agreed on a minimum sales price of 1.60 cents per pound landed U. S. Atlantic ports on strong unbleached sulphite of prime quality, and while it is said to be possible to secure some lots of such pulp on the spot in this country at slightly under this price level, importers are quoting 1.60 cents firmly on forward shipments from abroad. Prime bleached sulphite is available at 2 cents upwards per pound ex dock Atlantic seaboard, easy bleaching sulphite at 1.75 cents, and standard prime Swedish kraft pulp at 1.50 to 1.60 cents. Imported prime groundwood is quoted at $22 per short ton ex dock American Atlantic ports for dry pulp.

Current market quotations ex dock New York are as follows:

Bleached sulphite, No. 1	2.00- 3.50
Unbleached sulphite, strong No. 1	1.50- 1.75
Unbleached sulphite, No. 2	1.40- 1.50
Easy bleaching sulphite	1.75- 2.00
Mitscherlich, unbleached, genuine	1.85- 2.00
Mitscherlich, unbleached, ordinary	1.55- 1.75
Kraft, standard Swedish	1.50- 1.75
Groundwood, per ton (dry)	22.00-23.00

◆ Paper Stock

Imports of papermaking materials, other than woodpulp, into the United States, showed a sharp decrease during 1931 as compared with the preceding year, and, in fact, dropped to the lowest level both in quantity and value recorded in a long time. Imports of rags for papermaking last year reached a total of 116,680,789 pounds of a declared value of $1,571,148, according to official statistics compiled and issued by the U. S. Department of Commerce in Washington, registering a decline of 58 per cent in quantity, as compared with 281,592,177 pounds of a value of $5,565,340 imported in the calendar year 1930. The decrease in last year's value as contrasted with the preceding year amounted to 71 per cent. The average value of papermaking rags imported during 1931 was 1.34 cents per pound, contrasted with 1.97 cents a pound in 1930.

Importations of other paper stock into the United States last year reached a total of 123,285,085 pounds, valued at $1,503,180, compared with 221,568,051 pounds of a declared value of $3,052,291 in the preceding year, a decline of 44 per cent in tonnage and 50 per cent in value.

◆ Paper

Imports of paper of all kinds into the United States during the calendar year 1931 reached a total value of $125,623,138, registering an appreciable decline, as compared with importations of a declared value of $147,451,158 in the preceding twelve months, according to official U. S. Department of Commerce statistics. Practically all classes of paper and paper products shared in the decline, both as respects quantity and value.

Newsprint imports last year amounted to 4,133,811,984 pounds, valued at $112,169,627, contrasted with 4,559,303,478 pounds of a declared value of $131,800,333 in 1930. Thus, from a value standpoint, the newsprint imports constituted no less than 89 per cent of all the paper imported into this country during 1931.

Imports of cigarette paper into the U. S. in 1931 were valued at $5,396,469, totaling 20,777,285 pounds, compared with 14,168,393 pounds of a value of $4,290,682 in the preceding year. Imports of tissue and similar papers were valued at $1,131,395 last year, against $2,006,112 in 1930, while writing paper imports reached a value of $476,813, against $831,378 in 1930. Imports of kraft wrapping paper were valued at $169,190, against $296,864 in 1930, and of other wrapping paper $135,768, contrasted with $143,070 in 1930. Imports of surface-coated papers declined in value from $762,115 in 1930 to $538,394 in 1931, and hanging paper importations were valued at $304,513 last year, against $618,343 in 1930.

Imports of paperboard last year were valued at $296,302, compared with $332,852 in the preceding year, while pulpboard imports dropped from a value of $970,095 in 1930 to $495,453 in 1931. Paper box imports were valued at $968,845 last year, against $1,251,792 in the preceding year.

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◆ Foreign Trade Opportunities

The following foreign trade opportunities are issued by the Bureau of Foreign and Domestic Commerce of the United States Department of Commerce. Those interested are requested to communicate with the Bureau at its offices in Washington or New York or its branch offices in other cities, in every case mentioning the number of the inquiries referred to.

No. 55979—Felt paper and rag paper used in the manufacture of roofing felt. Warsaw, Poland. Purchase desired.

No. 56013—Writing paper and papeteries, medium grade. Malleswaram, India. Purchase desired.

No. 56041—Insulating paper manufacturing machinery. Santiago, Chile. Purchase desired.

No. 56121—Milk bottle caps. Beirut, Syria. Agency desired.

No. 56162—Fiber containers, waxed or plain. Toronto, Canada. Agency desired.

No. 56117—Paper match making machinery. Wenchow, China. Purchase desired.

No. 56115—Newsprint; bond paper in large sheets for cutting into letter size paper, and colored paper, of very cheap quality for printing programs. Medan, Sumatra. Purchase and agency desired.

No. 56127—Newsprint and other papers. Paris, France. Agency desired.

No. 56164—Sulphite bond and book papers. Buenos Aires, Argentina. Agency desired.

No. 56153—Wrapping paper and paper bags. San Juan, Porto Rico. Agency desired.

No. 56138—Writing paper, office. Saturce, Porto Rico. Agency desired.

No. 56251—Cigarette paper, and transparent papers. Sind, India. Purchase desired.

No. 56250—Newspapers, overissue. Amoy, China. Purchase desired.

No. 56252—Toilet seat covers, paper, Toronto, Canada. Agency desired.

No. 56424—Caustic soda and soda ash. Guatemala City, Guatemala. Agency desired.

No. 56389—Bond and other writing paper in large sheets. Bombay, India. Agency desired.

No. 56388—Overissued newspapers. Bombay, India. Purchase desired.

No. 56446—Printing paper. Cairo, Egypt. Purchase desired.

No. 56393—Fiber cartons (large size) manufacturing machines. Prague, Czechoslovakia. Agency desired.

No. 56341—Soda ash and caustic soda. Stockholm, Sweden. Agency desired.

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◆ Pulp and Paper Alumni Meet at Syracuse

Twenty-five members of the pulp and paper alumni of the New York State College of Forestry, Syracuse, N. Y., met at the New Yorker Hotel in New York City, February 17. Others in attendance were Dean Hugh P. Baker and Professors Libby and Peterson of the College of Forestry.

Professor Libby presided and introduced as speakers Dean Baker; Tipley Bowman, secretary of the National Timber Conservation Board, who was a guest; Walter Glass, '17; Karl A. Swenning, '20; George French, '22; Harry E. Weston, '21; Harvey Cannon, '23; Ralph Schilly, '24; William R. Willets, '26, and Edgar Winne, '23.

Dean Baker spoke of the new developments at the college, including plans for the new Pulp and Paper Laboratory building, now under construction. Mr. Bowman spoke of the work Dean Baker has been doing on the Timber Conservation Board, and special committee on utilization. Professor Libby called attention to the assistance which alumni could give the college in finding places for next year's graduates. Walter Glass outlined a plan for getting more pulp and paper graduates into sales work. Harry Weston made a plea that the students be more active in putting their ideas and experiences into print when they are out of college. George French spoke of the value of his college training in his work with Western Electric Company.

The pulp and paper courses at the college are a combination of forestry and chemical engineering as applied to manufacture of pulp and paper. These courses were established in 1920 at the suggestion of Dean Baker, and the first class was graduated in 1923.

FORTY-SEVEN YEARS AGO

WHEN the village "Paper Man" recommended the first Detroit product to the business man of your Grandfather's day, he said, "It is as good as it can be made." That was about the time that the slow cooking, Mitscherlich process was developed in this country.

The new ideals of quality which were by that process established, we have never sacrificed. To maintain those ideals unchanged throughout forty-seven years of continuous business growth and expansion, has required changes so vast that the average man of that generation would be amazed if he could see the changes and the improvements in Detroit Sulphite's Mill today.

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New feature for reversing web in winding.
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CURRENT QUOTATIONS

+ New Papers +

Writing—	
White rag	12–40
White sulphite	6–30
Colored rag	11–40
Colored sulphite	6–30
Ledger—	
White rag	12–40
White sulphite	8–30
Colored sulphite	8–30
Colored rag	11–40
Bond—	
White rag	12–40
White sulphite	6–30
Colored sulphite	6–30
Colored rag	11–40
Book—	
No. 1 S. & S. C.	4.75– 7.50
Machine finished	4.25– 6.00
English finish	4.25– 6.00
Coated and enameled	6.50– 9.00
Lithograph, M. F.	6.50–11.00
Newsprint—	
Rolls, contract, per ton, delivered New York	53.00–
Rolls, transient, per ton, delivered New York	53.00–
Sheets, per ton, delivered New York	58.00–
Sideruns, per ton, delivered New York	40.00–44.00
Cover stock—	
Coated, both sides	–10.25
Coated, one side	–10.15
Tissue—	
No. 1 white, 20x30	.65– .70
No. 2 white, 40x36	.55– .65
No. 1 manila, 24x36	.55– .65
Kraft	.65– .70
Wrapping—	
No. 1 kraft	4.25– 5.00
No. 2 kraft	3.25– 3.50
Southern kraft	3.25– 3.50
Boards—	New York and Chicago
News	22.00–25.00
Straw	32.00–35.00
Plain chip	22.00–25.00
White coated chip	35.00–40.00
Manila coated chip	30.00–35.00
Binders' board	55.00–60.00

NEW YORK CITY

◆ THE REPORT of the Robert Gair Company, manufacturer of paper board and paper products, with headquarters in New York City, for the year ended December 31 last shows a net loss of $651,321 after depreciation, inventory adjustments, write-offs on investments and other charges, contrasted with a net loss of $1,370,583 in the preceding calendar year.

◆ FRED A. LEAHY, for the past twenty years vice president and sales manager of the Eastern Manufacturing Company, with headquarters at 230 Park avenue, New York City, has resigned and has severed his connections with that company. Mr. Leahy's plans have not yet been announced, but it is understood that his resignation is the result of his desire to devote his full time to other interests. Mr. Leahy's successor as sales manager of the Eastern organization is George P. Lee, who has been with the company for ten years and who has had long and varied experience in both the manufacture and distribution of fine writing and printing papers.

◆ HAMILTON T. DISBROW, president, has announced the resignation of William E. Ebbets, Sr., as vice president and general manager of Coy, Disbrow & Company, Inc., well known paper merchants of 686 Greenwich street, New York. While Mr. Ebbets has not divulged his plans for the future, he will continue to make his headquarters at the offices of Coy, Disbrow & Company for the present.

◆ BLAIR B. STRINGFELLOW, who has managed the New England sales division of the Albemarle Paper Manufacturing Company since May, 1929, has been promoted to the New York office, of which he has taken charge. Succeeding him as representative in the New England territory is Arthur Cherry.

◆ PAUL TYNAN has resigned as New York representative of the Allied Paper Mills, of Kalamazoo, Mich. According to announcement from the home offices of the company, the New York office will be continued at 230 Park avenue, with the same personnel.

◆ THE EATON, CRANE & PIKE Company, Inc., of New York City, paper merchants and mill representatives, has filed notice of a change in name to the Eaton Paper Company, Inc.

◆ THE BOWATER PAPER Company, Inc., of New York, mill representatives, has reduced its capitalization from $150,000 to $100,000.

◆ THE UNION BAG and Paper Corporation, of New York, reports for the year ended December, 1931, net income after depreciation and expenses, but before federal taxes, of $112,584, compared with a net loss of $155,283 in 1930.

◆ THE KRAFT Bag Corporation is the name of a new concern chartered under New York State laws with a capital stock of $50,000 of preferred and 100 shares of no par common stock to manufacture and deal in paper bags. Dorff & Levy, of 8 West Fortieth street, New York, are named as representatives.

◆ THE FIRM of W. F. Etherington & Co., paper dealers and mill agents of 60 East Forty-second street, New York, has been incorporated under New York State laws with a capital of 1,000 shares of no par stock and will henceforth be known as W. F. Etherington & Co., Inc. Sanford G. Etherington was the principal incorporator.

◆ THE H. P. ANDREWS Paper Company has moved to larger and more centrally located quarters at 14 West Third street, New York, where the new telephone number is Spring 7-0814.

◆ THE SUMMIT PAPER CO., Inc., of 110 East Forty-second street, New York, has made an assignment to Moses B. Sherr, of 350 Empire Boulevard, Brooklyn, N. Y.

◆ George W. More

George W. More, the "grand old man" of the papermakers' supplies trade in the metropolitan New York district, for more than half a century identified with the industry and for the past 35 years manager of the Mill Supply Department of George W. Millar & Co., Inc., 284 Lafayette street, New York, died on February 7 at his home in Ridgewood, N. J., in his eighty-second year. Mr. More had attended to his business duties as usual up to a few days prior to his death.

"Major" More, as he was fondly called by his friends in the trade, came to New York originally from Springfield, Mass., more than 50 years ago and began his career in the paper stock business with the old Charles Harley Company. Afterwards he was with John T. Lyon & Co., and in January, 1897, he went with George W. Millar & Co., Inc., to assume the management of the Mill Supply Department of that concern, succeeding E. W. Taylor, deceased.

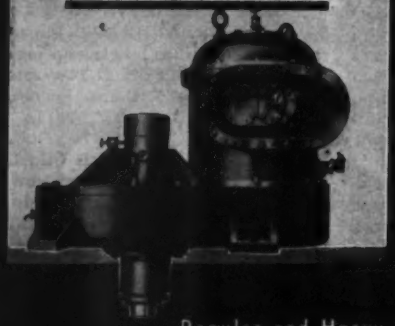
There was probably no individual in the trade better known or more universally liked and respected than Mr. More. He traveled extensively among paper mills and was widely known to paper manufacturers the country over. He is survived by a son and two daughters, his wife having died some years ago.

NORTHERN NEW YORK

◆ THE UNITED STATES Patent Office has announced the award of a joint patent to Charles W. Valentine and Alfred F. Helin, both of Watertown, covering their invention of a paper winding mechanism. Twelve claims were regarded as new and patentable features in the device. The inventors filed their applications for patent rights on their invention on Sept. 12, 1929, and assigned the rights to the use of their patent to the Bagley & Sewall Co. of Watertown.

◆ WILLIS H. HOWES, vice president of Knowlton Brothers, Inc., of Watertown, has been elected president of the Cover Paper Manufacturers' Association. The annual meeting of the association was held in New York City in connection with the fifty-fifth annual

NEW ENGLAND
& NETT-CO



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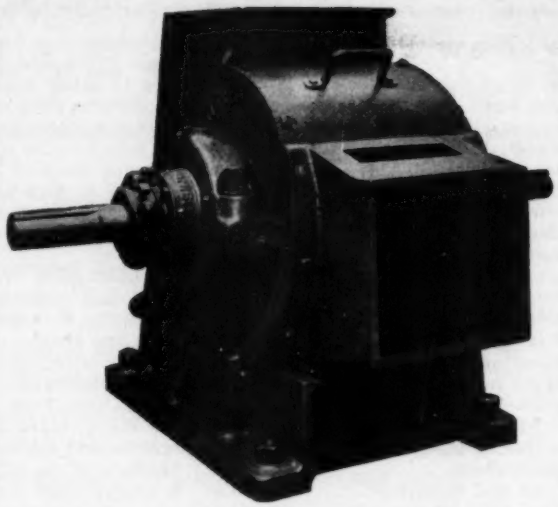

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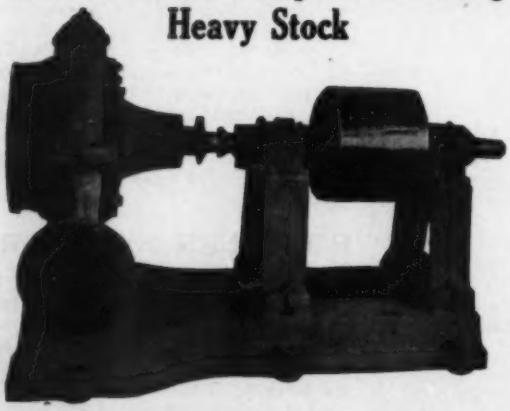

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meeting of the American Paper & Pulp Association.

◆ Receiver for Saranac Pulp and Paper

A voluntary petition in bankruptcy was filed on January 28 by the Saranac Pulp and Paper Company, Inc., of Plattsburg, N. Y., and later John F. White, president of the company, and Howard F. Taylor, of Utica, N. Y., were named receivers and were authorized by the court to continue the business for a period of twenty days. The liabilities of the corporation were put at $600,000 and the assets at $350,000.

On February 24 announcement was made that creditors of the company had accepted a bid of $424,000 for the mill from the Berst-Forster-Dixville Company, of New York City. The sale must be approved by the Federal Court. If this approval is given, the purchasers announced, the plant will be opened immediately. The purchasers have a plant across the road from the Saranac mill.

◆ KNOWLTON Brothers, Inc., of Watertown have been awarded a federal contract for 30,000 pounds of cover paper for government use. The paper will be shipped to the government printer.

◆ CERTIFICATE of incorporation of the Jewell-Peck Paper Corporation under the laws of the state of New York has been filed with the secretary of state at Albany. The incorporators are Corwin T. Jewell of Watertown, former general manager of the St. Regis Paper Co.; Ralph C. Peck, Brownville, formerly connected with the St. Regis sales department, and Mrs. Frances K. Jewell, of Watertown. The company will have its offices and warehouses in Watertown. Its capitalization will be $5,000 divided into 50 shares, all common, with a par value of $100. The three incorporators will be the directors and officers. This company will engage in the buying and selling of paper products of all kinds.

◆ FULL-TIME operation of the Deferiet mills of the St. Regis Paper Co. was resumed Monday, Feb. 23, according to an announcement made by T. A. Wark, general manager of the St. Regis. Mr. Wark also announced that the kraft paper and bag plant of the Taggart Corp. at Herrings had been operating on full time for several weeks. Activities at the Taggart Bag plant at Oswego will also probably be increased in the near future, Mr. Wark said. The Watertown Taggart mill is already operating on a full-time basis. Resumption of work at Deferiet resulted in the recall of 150 employees who were laid off at Christmas time. Since Christmas the Deferiet mill had employed only about half its usual force.

◆ HAMILTON GARNSEY, JR., recently designated as assistant to the president of Goulds Pumps, Inc., Seneca Falls, N. Y., has been appointed works manager, succeeding T. I. S. Boak, resigned.

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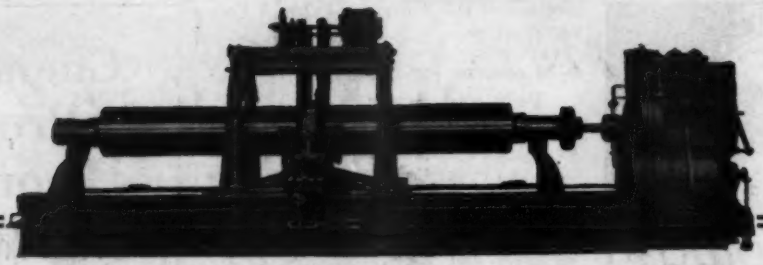

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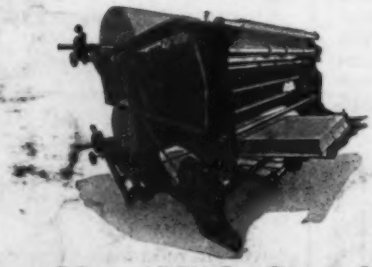

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